BLM LIBRARY
88070778

ORIG.
BLAC
.56
EAR

Black Mountain Little Whiskey Creek
Environmental Assessment for Integrated Forest Service and Bureau of Land Management Timber Sale

PURPOSE OF AND NEED FOR THE ACTION

Background

As a result of the 1973 extensive forest inventory, plot classification and allowable cut plan, the Grand Junction District Bureau of Land Management (BLM) has identified certain timber lands as productive forest lands planned for harvest. The Yampa District, Forest Service action is developed in the Yampa District multiple use plan and consistent with Forest Objectives and Policy Guides (USDA, Forest Service 1970) and the Black Tail Land Use Plan and Environmental Impact Statement (USDA, Forest Service, 1976).

Authorizing Actions

The Forest Service Black Tail Land Use Plan and Environmental Impact Statement, the Black Mountain route analysis, Forest Service Manual 2400, and BLM Manual 5400 and 9113 were used to analyze and establish accepted criteria for this and similar actions. Alternatives considered fall within these accepted standards. Alternatives outside these standards were not considered.

The management of these stands would produce wood products, convert older stands to younger stands that will grow wood faster, and be more vigorous and resistant to insect and disease attack.

The proposed actions are intended to carry out management and harvest of forest resources on these lands and are to be consistent with each agencies' policies, plans, and directions mentioned. The preferred action was developed from information analyzed in the Black Tail Land Use Plan, Environmental Impact Statement and the Black Mountain Forest Management Plan (USDI, Bureau of Land Management 1980).

ALTERNATIVES

Three alternatives are considered for the Black Mountain-Little Whiskey Creek Timber Sale. The preferred alternative proposes an integrated BLM, Forest Service partial cut timber sale. The second alternative considers the same type of sale employing clear cutting methods as opposed to partial cutting techniques, and the third alternative is a no action alternative whereby timber resources would not be further utilized. Different cutting levels were not considered ~~as~~ alternatives since these are a function of sustained yields and technical and economic capabilities of the industry.

The general location of the Black Mountain-Little Whiskey Creek timber area is shown on map 1 and appendix A.

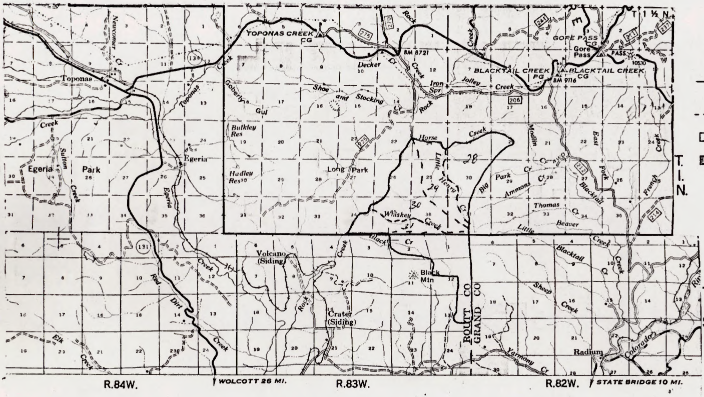
BLM Library
D-553A, Building 50
Denver Federal Center
P. O. Box 25047
Denver, CO 80225-0047

HD 9750.8 .C6 B58

DATE 1-12-80

ENVIRONMENTAL ANALYSIS MAP / WHISKEY CREEK - BLACK MOUNTAIN

ID 88070778



LEGEND

—— BOUNDARY OF AREA IN WHICH TREES ARE TO BE CUT.

- - - COMPARTMENT BOUNDARY

☐ BLM.

▨ F.S.

½" = 1 MI. SCALE

#927149553

No Action Alternative

This alternative would represent the present status. No timber sales would be offered. No roads would be constructed and cooperation between agencies would not be needed. The timber resource would not be utilized for the benefit of man or would not receive silvicultural management.

Preferred Alternative for an Integrated Timber Sale

An integrated BLM/Forest Service timber sale would offer for sale through public auction and sealed bids 7 million board feet of lodgepole pine, aspen, douglas-fir, subalpine fir saw timber and poles, for harvest. The sale would be carried out cooperatively between the Routt National Forest, Yampa Forest Service District and the Glenwood Springs Resource Area, Grand Junction District BLM. See appendix A for the details of the interagency agreement.

As a means to fulfill the purpose of and need for the proposed action the preferred alternative, described below in terms of a series of proposed actions, would be implemented upon final approval.

Sale Preparation and Layout

A management plan for the BLM and a land use plan for the Forest Service have analyzed layout criteria that considers silvical needs of the tree species and other resource values. Specific layout procedures and other resource considerations are identified in BLM Manual 5421 and in Forest Service Manual 2400. The layout will require the marking of trees with paint to designate the trees to be selectively harvested. In clearcut areas the cutting area boundaries would be designated with posters and/or paint.

The layout also includes cruising, an estimate of the volume expressed in board feet of the standing trees to be harvested. This would be done on the ground using a statistical sampling method. The main layout considerations include the following:

1. Multiple Use Goals. Consider scenic quality, wildlife habitat, recreation, water, soil, minerals, and fisheries as other important resources.

2. Location and Designation of Trees to be Cut. See environmental analysis map 1 for location of sale area. Trees to be harvested would be marked with orange or yellow tree paint.

3. Type of Logging. Tractor logging methods would be used in which trees are skidded in log lengths to a central point using track or rubber tired vehicles where they are loaded on trucks for transportation to the mill.

4. Silvicultural Treatment--Forest Service. The Forest Service would treat four management compartments containing a total of 1,213 acres. The following is a general summary of the cutting practices. A detailed description of the stands and treatments along with a location map are contained in appendix B.

a. Young and Old Growth. Remove high risk and overmature trees, applies to all compartments.

b. Old Growth. Patch cut and group ~~trees~~ tree selection to eliminate mistletoe and stimulate reproduction, applies to all compartments.

c. Mixed Species Stands. Remove overmature trees and trees with poor form and vigor, applies to all compartments.

d. 21 acres in Compartment 54929. Remove dead volume and near dead and sanitize remaining stems.

e. 20 acres in Compartment 54930. Remove 15 to 20 percent of basal area in high wind risk-portion and 25 to 35 percent of basal area in moderate wind risk portion.

BLM Treatments. Stands numbered 112, 123, 130, 154, 154A, 158, and 159. Remove 30 percent of the basal area using individual tree selection and patch cuts for low windfall risk situations. This is an intermediate cut. In moderate windfall risk situations stands would be clearcut and not to exceed 5-acre blocks, or will be left untreated. See appendix B for stand locations.

Stand numbers 113, 114, 127, 128, 129, 155, 156, 157, 162, 163, 164, and 169. In low windfall risk situations remove 30 to 40 percent of the basal area with emphasis on removal of intermediates. This is a regeneration cut. Marking rules for individual tree selection will apply. In moderate windfall risk areas 30 percent of the basal area will be removed first. Low risk area marking rules apply. Provision will be made to salvage blowdowns. In high risk situations cleared openings (up to 5 acres) will be harvested. The remaining stand will be left uncut.

Stand 112 and pockets in stands already mentioned will have long clearcut perimeters along edge of mistletoe infections and interspersed clearcuts up to 10 acres in size on half the area. Remove the remaining stand within 10 years.

Stands numbered 118, 119, 120, 121, 122, 124, 125, 126, 153, 161, 165, 166, 167, 168, 170. These stands are pole stands and will be partially cut using an individual tree selection cut removing trees 8 and 9 inches diameter at breast height. Five to 8 inches diameter at breast height stands will not be treated now, but will be commercially thinned for poles later. See appendix B for more detail.

5. Road Locations. See map 2.

6. Regeneration and Revegetation. Reforestation will be by natural means. Silvicultural practices are designed to promote natural regeneration to an acceptable stocking level within 5 years. Cuts, fills and temporary spur roads and skid trails will be rehabilitated, as necessary, by broadcast seeding. The poundage per acre and species will be specified in the timber sale contract.

7. Streamside and Watershed Protection. Timber harvesting in buffer strips will generally be limited to that needed for public safety and control of insects and diseases. Occasional overmature trees may be selected for harvest to improve the stand. Carefully controlled, light selection cutting and thinning may be permitted where esthetics are kept in mind, but the area will not be clearcut. No tractor logging on slopes over 40 percent.

8. Wildlife Considerations. The Black Tail Land Use Plan and Environmental Impact Statement (USDA, Forest Service 1976) and the Black Mountain Timber Sale Plan (BLM) have identified management requirements and procedures to minimize impacts on wildlife habitat. These are summarized below as suitable requirements for timber harvest activities on all land covered in this analysis.

a. Snag Management. Snags, roost trees, and raptor nest trees will be left in partial cutting areas; this is optional for clearcut areas.

Each sale area will be examined by a wildlife biologist and forester prior to marking in order to identify specific valuable wildlife trees.

A buffer zone up to a quarter mile to restrict activity during the nesting season will be established around all snags with active raptor nests.

When available, three or more snags of varied height and diameter would be left per acre.

On the edge of clearcuts and adjacent to water areas all snags would be left. Vegetative edges and water sites are preferred sites for cavity nesters.

b. Wildlife Cover. Clearcuts will not exceed 40 acres and would be irregular in shape to maximize edge effect.

Adequate escape cover surrounding elk wallows, natural water holes, and big game travel ways will be maintained.

c. Aquatic and Riparian Habitat. Streamside vegetation would be managed to protect and maintain water quality. Managed strips of riparian vegetation would be left along all perennial streams. These will vary from 50 to 200 feet in width.

On Black, Whiskey, and Horse Creeks, buffer strips would be adequate to maintain water temperature, streambank stability, and act as sediment filters.

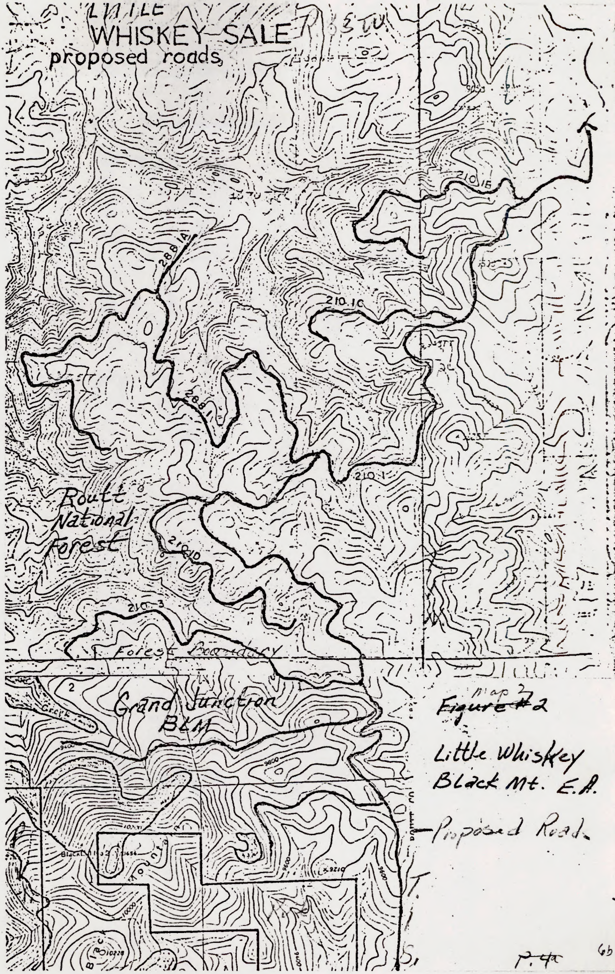
No equipment would be allowed in unmanaged buffer strips or streams except at approved crossings.

d. Vegetative Diversity. Manage aspen inclusions in the coniferous forest to perpetuate aspen on the site to enhance habitat diversity.

Apply a grass and forb seed mixture to road cuts and fills, landings, and permanently closed roads, when necessary.

e. Road Management. Road construction and timber management would be timed to reduce disturbance to elk, particularly during calving in June.

9. Visual Considerations. These include natural shaping of clearcuts, reseeding, minimum road widths with minimum cuts and fills and partial cutting to maintain a green aspect.



Map 2
~~Figure #2~~

Little Whiskey
Black Mt. E.A.

—Proposed Road.

10. Biological Needs of Lodgepole Pine. Lodgepole Pine is the major species that would be harvested. An understanding of its biological requirements helps in understanding the aspects of this alternative (see BLM Manual 5611.1).

11. Cutting and Removal. This action is carried out by cutting of the designated trees from the stump with a chainsaw, removing the limbs and top, bucking the bole of the tree into log lengths and dragging the logs to a central point, called a landing, where they can be loaded onto trucks for transportation to a sawmill. The logs will be moved to the landing point by means of a track-type tractor or rubber-tired tractor.

12. Transportation System. Approximately 19 miles of 14-foot wide road with turnouts would be surveyed, designed, and constructed for the purpose of transporting logs.

Approximately 4 miles would be constructed on BLM and 15 miles on Forest Service lands. All road grades would be less than 8 percent except for two segments, four to five stations long, on BLM. A justification is included in appendix C. Also, refer to appendix C for road construction and design specifications.

Forest Service roads would be closed to public motor vehicle use. Roads on BLM land would be open to use but are legally available only to adjacent landowners who control 4-wheel drive access to BLM land from the south.

13. Slash. Slash treatment would not be carried out until the cones have had time to dry out and open up. Where a residual stand remains, treatment would be limited to lopping and scattering. Where necessary, and if equipment is available, slash would be chipped along the roadway. In some instances hand piling and burning would be used to minimize damage. In cleared openings, concentrations may be machine piled for firewood or burning if not utilized for fuelwood.

14. Cultural. Provisions would be made in the sale contract to note and protect cultural resource encountered during operations under the contract.

Clearcutting Alternative

This alternative would be the same as the preferred alternative except the stands would be clearcut instead of partially cut. This difference in cutting practice would affect the size of the area cut, less acres with this alternative, the visual, soil, watershed and vegetative resources differently from the preferred alternative. The economic aspects would also be different. From a silvicultural point of view, clearcutting is a sound and practical way of bringing mature and overmature lodgepole pine forests under management. There are several reasons for clearcutting:

1. Lodgepole pine, is shade intolerant and reproduces best when overstory competition is removed.

2. Dwarf mistletoe, present to varying degrees, is best controlled by separating old and new stands.

3. Windfall, while variable, is always a threat to lodgepole pine forests.

4. The greatest potential for growth in lodgepole pine can be realized through clearcutting.

5. Economically, it is less costly to clearcut because greater volume per acre is harvested so cost per acre goes down and less labor is expended as opposed to marking for partial cutting. (David Tackle, Silvics of lodgepole pine (Revised) U.S.D.A., F.S. 1961)

For these reasons clearcutting is discussed as a valid alternative.

AFFECTED ENVIRONMENT

Climate and Air Quality

The climate has wide seasonal variations in temperatures ranging from 40 to 80 degrees F. Summertime temperatures average 60 degrees F. Annual precipitation varies between 20 and 30 inches and occurs mostly as snow, with some summer thunder showers. Snow occurs between November and May, and can reach depths of 3 to 4 feet.

There are no population centers or industries to cause air pollution. This area has a high quality mountain airshed.

Geology, Topography, Minerals, and Alluvial Valleys

Geology

The proposed timber sale area lies within the northeastern portion of the White River Plateau, an apparent northwestward extension of the Sawatch Mountains.

The formations outcropping within the area include Middle Tertiary intrusives (Oligocene). These include granodiorite and quartz monzonite in stocks, dikes, and sills. The Minturn Formation (Pennsylvania) consists of sandstone, grit, conglomerate, shale, and scattered beds of reefs and carbonate rocks. The Mississippian, Devonian, Ordovician, and Cambrian rocks include sandstone, limestone, dolomite and quartzite. The Precambrian consists of granite of approximately 1.7 million years of age.

Minerals

No apparent signs of mining activity have been reported to date; and no mining claims are known to exist within the proposed sale area. There are no mineral leases on the area. There is mining activity on the volcanic cinders to the west, but the nearest occurrence of cinders is a mile from this area.

Topography

Topography is moderately steep to steep. Some slopes are in excess of 40 percent with the majority of slopes being between 15 and 40 percent. The lowest elevation is Rock Creek near the Forest boundary, about 8,000 feet with the highest elevation of 10,400 feet occurring on Black Mountain. The average elevation is approximately 9,400 feet. Additional details on topography can be found in the Black Tail Multiple Use Environmental Impact Statement prepared by the Forest Service and the Black Mountain Forest Management Plan, prepared by the BLM.

Alluvial Valleys

No alluvial valleys exist in the proposed sale area.

Soils

The Soil Conservation Service completed soil mapping on public lands on Black Mountain during the 1979 field season. The Bundo-Unnamed mapping complex soil mapping unit encompasses the entire conifer area. Table 1 summarizes properties of the two soils. Similar soils are expected to occur on the national forest lands.

Water

The proposed sale area lies within the Rock Creek watershed a tributary to the Colorado River. Horse, Little Henry, Whiskey, and Black Creeks are the prinicple streams in the unit and generally flow north-westerly. No specific streamflow data are available, however, streams in the area typically exhibit seasonal discharge variation. Generally, 60 to 70 percent of the flow occurs in May and June in response to snowmelt. Average annual water yields are estimated at 1.5 acre-feet per surface acre of land (USDA, Forest Service 1976).

Snow depth and moisture equivalent data are available for the Lynx Pass Snow Course (No. 6J06S) located approximately 3 miles north of the northern unit boundary. Mean values for 15 years of record (1963 to 1977) are included in table 2.

TABLE 2

MEAN MONTHLY SNOW DEPTH MOISTURE EQUIVALENT FOR 1963 TO 1977

Month	Snow Depth (Inches)	Water Equivalent (Inches)
February 1	33	7.5
March 1	39	10.3
April 1	42	12.6
May 1	25	8.7

No water quality baseline has been established for streams in the unit. Field observations indicate high water quality exceeding the Colorado State Water Quality Standards for Class B-1, cold water fisheries (USDA, Forest Service 1976).

Water rights have been granted for utilization of a portion of Rock Creek's streamflow for irrigation purposes. Water needs for fishery and aesthetic purposes have not been determined.

TABLE 1

SOIL PROPERTIES TABLE

Soil Name	Depth to Bedrock (inches)	Soil Drainage	Surface Texture (thickness in inches)	Subsurface Texture (thickness in inches)	Subsoil Texture (thickness in inches)	Permeability	Available Water Capacity	Surface Runoff	Erosion Hazard
Bundo	60+	Well drained	Cobbly sandy loam (8)	Sandy loam (24)	Sandy clay loam (7)	Moderate	Moderate	Medium	Moderate
Unnamed	10 to 20	Well drained	Gravelly loam (2)	Gravelly sandy loam (13)	Very gravelly sandy clay loam (3)	Moderate	Low	Medium	Moderate

Vegetation

No threatened or endangered plants are known to occur in the proposed sale area.

Range condition on the national forest is rated as fair to excellent. Trend is upward. On BLM land, ecological condition in the sagebrush grass is rated as fair while the timbered areas are rated as poor. No data is available on trend.

Lodgepole pine forests are mature or overmature and the trend is moving toward deterioration. Overmature stands have varying degrees of dwarf mistletoe infections. As lodgepole stands reach pathological rotation, subalpine fir reproduction occupies the site as a climax species replacing the lodgepole stands.

The following Forest Service Ecological land units (a combination of vegetation type and land form) are found in the sale area USDA, Forest Service 1976). They are given here in order of decreasing size.

Ecological Land Units

Lodgepole Pine and Sedge. This Ecological Land Unit covers 82 percent of the proposed sale area. Elevations range from 8,400 to 10,400 feet on nearly level to moderately steep slopes. Precipitation varies from 20 to 28 inches a year.

Young and mature lodgepole pine dominate the site. Some subalpine fir is also present. Sedge is the most common species in the understory; but whortleberry, pinegrass, ground juniper, wildrose, and Oregon-grape are common.

Growth potential for lodgepole is 35 cubic feet per acre per year. Forage production is less than 400 pounds of air dry herbage per acre.

Douglas Fir and Sedge. This unit occurs in isolated tracts in the west-central percent portion of the proposed sale area on steep north facing slopes. It covers 9 percent of the area. Elevations range from 8,400 to 9,600 feet. Precipitation averages about 23 inches a year.

Douglas-fir trees dominate the site. Some subalpine fir is also present. Sedge is the most common species in the understory although whortleberry, pinegrass, ground juniper, and Oregon-grape occur.

Growth potential for Douglas-fir is 30 cubic feet per acre per year. Forage production is less than 400 pounds of air dry herbage per acre.

Sagebrush and Grass. This unit is scattered throughout the proposed timber sale area and occurs on moderately steep to level slopes and on shallow soils of ridge tops. It covers 5 percent of the area. Elevations range from 7,800 to 9,000 feet. Precipitation varies from 20 to 27 inches a year. Sagebrush dominates the site with an understory of numerous grasses including Idaho fescue, Thurber fescue, western wheatgrass, blue bunch wheatgrass, junegrass, Kentucky and Sandberg bluegrasses, mountain brome, onion grass and sedge. Numerous forbs occur but no single species dominates the site.

Potentially, the site can produce an average of 1,600 pounds of air dry herbage per acre annually. It is presently grazed by cattle, elk and deer during the summer months.

Aspen, Forb, and Grass. This occurs as small inclusions throughout the proposed sale area as well as one larger stand in the northeast portion of the area. It exists generally on south facing slopes that are nearly level to moderately steep. Eventually, the site will ecologically progress to coniferous vegetation. It covers 3 percent of the area. Elevation varies from 8,500 to 9,600 feet. Precipitation varies from 20 to 25 inches a year.

Young aspen dominate the site with a forb and grass understory that includes wildrye, mountain brome, junegrass, bluegrasses, wheatgrasses, sedges, loveroot, blue bells, polamonium, aster, larkspur, fleabane, yarrow, geranium, peavine, lupine, and groundsel. Other species occur but do not make up a significant portion of the vegetative composition. This unit produces an average of 2,400 pounds of air dry herbage per acre annually. It supplies an important part of the forage for big game and domestic livestock. Growth potential for aspen as a timber species is 20 to 30 cubic feet per acre per year.

Willow and Wet Meadow. This unit occurs along streams and flood plains in the shallow drainages of the north portion of the area. It covers 1 percent of the proposed sale area. Elevations range from 8,600 to 9,200 feet. Precipitation averages about 26 inches a year.

Water sedge and willows that line the stream banks dominate the site. Other vegetative species that occur include tufted hairgrass, meadow foxtail, clover, and rushes. During dry periods the site can produce an average of 4,000 pounds of air dry herbage per acre per year. The area is grazed by elk and deer during the late summer and fall.

Wildlife

Elk and mule deer are the primary big game species utilizing the sale area. Use is primarily during the summer months with the animals migrating to lower elevations to the south and east during the winter. The number of animals utilizing the area is unknown at this time.

Smaller animals on the area include snowshoe hare, chipmunk, pine squirrel, porcupine, coyote, red-tail hawk, owls, blue grouse, and passerine birds typical of the lodgepole pine forest.

Trout populations and beaver are found in Black, Whiskey, Horse, and Little Henry Creeks.

There are no known or suspected state or federally listed threatened or endangered species occurring on the area. There are no wild horses and cattle are the only domestic animal using the area. See land use in this section for details on livestock.

Cultural Resources

There are no record cultural resource sites within the proposed sale area; however, cultural resource survey would be conducted prior to the sale of timber in conformance with applicable laws. See the preferred alternative for comments regarding mitigation. An opinion would be solicited from the Advisory Council on Historic Preservation and the State Historic Preservation Officer if cultural resources are observed.

Visual Resources

The low rolling hill country of the proposed sale area remains in a natural state. Open parks are interspersed with predominantly conifer forests so that aspen, sage, and grasses break up the continuous green colors of the forest canopy.

Some dirt roads bisect the area but the character is natural.

The proposed timber sale has been assessed according to Forest Service and BLM visual resource management procedures. The northern, Forest Service portion of the sale is divided into three visual management classes, 3A -partial retention, MG-1B, partial retention and 3B, modification. The partial retention classification stipulates that changes remain visually subordinate to the landscape and that they repeat the form, characteristic, line, color, and texture common to that landscape.

The modification category allows that a proposed change can become a focal element and visually dominant but the alterations should borrow from existing form, line, color, and texture patterns.

The 3A and Mg-1B areas noted in the Black Tail Forest Service, Environmental Impact Statement are visually sensitive because of State Highway 134 which is rated as a secondary observation corridor.

The southern portion of the proposed sale area has been evaluated according to BLM procedures. The C-level scenic quality landscapes are background or seldom seen landscapes which qualify them for management Class IV. This class allows visual contrasts to attract attention and to be dominant in terms of scale relationships; but existing form, line, color, and texture patterns should be repeated. (BLM Manual 8411.6)

Recreation Resources

Currently, the Black Mountain area is a forested, mountainous area that provides for nonmotorized, primitive recreation. The area is largely natural except for a 4-wheel drive trail. The area has potential to provide for many recreational activities, such as hiking, backpacking, cross-country skiing, scenic viewing and big game viewing and hunting. Existing visitor use data are not documented. Some big game hunting is known to occur but this has not been qualified. Occasional snowmobiling does occur in the area; and one snowmobile club has expressed interest in obtaining access to the unit for snowmobiling and 4-wheeling.

Legal vehicle access is prohibited into the area except for snowmobiles because it is surrounded by private land and Forest Service land which is designated "closed." The adjacent private land owners do allow some hunters to cross their lands to reach BLM lands. Fee hunting and guiding/outfitting are believed to occur in the area to be cut. Several hunter camps are located in the area.

Social Conditions

The social setting is quite rural. Kremmling, Colorado is the largest nearby town with an estimated population of 1,400. Yampa, the nearest town has a population of about 327; population has decreased since 1960. Employment for the area is provided by agriculture, construction, wholesale and retail trade, services including about 1/3 in public administration, services, mining and manufacturing.

For additional details regarding social conditions see the Black Tail Environmental Impact Statement and Land Use Plan (USDA, Forest Service 1976).

Economic Conditions

This proposal will influence the timber processing and sawmilling portion of the economy and the discussion will be limited to that. Sawmills at Kremmling and Eagle, Colorado are the major milling points for the saw timber from the proposed sale. Three small mills cut timber from Forest Service and Bureau of Land Management lands.

The demand for wood products will increase nationally and locally. Prices are also increasing. Current lumber selling prices, wholesale, in the central rocky mountain area are slightly over $320.00 per thousand board feet. Seven million board feet has a realization value of approximately 2¼ million dollars.

Land Uses

Range

Six ranchers (BLM and Forest Service) have season-long use on four allotments in the proposed sale area. Approximately 213 head of cattle graze the area; no sheep or other livestock are present.

BLM Land. Segments of three BLM allotments are located with the proposed sale area. Table 3 gives number of cattle and animal unit months authorized on these allotments.

TABLE 3

Allotment	Number of Cattle	Season of Use	Animal Unit Months Authorized
Horn	21	May 1 to Oct. 31	249
Copper Spur	18	Apr. 1 to Feb. 28	211
Black Mountain	9	June 1 to Feb. 28	109
Total	48	Total	569

Forest Service Land. Only one Forest Service allotment (Horse Creek) is located within the proposed sale area. Table 4 gives number of cattle and animal unit months authorized for this allotment.

TABLE 4

Allotment	Number of Cattle	Season of Use	Animal Unit Months Authorized
Horse Creek	68	July 16 to Oct. 10	193
Used by 3 ranchers	55	July 01 to Sep. 25	158
	42	July 01 to Sep. 25	121
Total	165	Total	472

Wilderness

The area has been reviewed for wilderness designation and does not qualify.

ENVIRONMENTAL CONSEQUENCES

Preferred Alternative

Climate and Air Quality

Air quality would be affected temporarily because of dust particles that were stirred into the air during the road construction and from the movement of log trucks along the main haul roads. This is a local, temporary, slight impact. "The air quality would also be affected by any slash burning that may occur. This would be a moderate, local, short-term impact."

Geology and Minerals

There are no environmental consequences.

Topography

Approximately 32 acres would be impacted by 19 miles of 14 foot haul roads. These roads interrupt the topography causing visual impacts and a slight amount of erosion. These impacts are further discussed under soil and visual impacts.

Soils

Disturbances from road construction, logging activities and slash disposal would cause short-term, adverse impacts to the soil resource.

Impacts due to road construction would be the most significant. The physical properties of soils would be altered, especially those of structure, infiltration, and permeability. Onsite erosion would initially increase, but would decrease after the cut and fill slopes are revegetated. Assuming adequate drainage facilities are planned and properly constructed, impacts of erosion would be minor. No problems with slope failures are anticipated because the soils are coarse textured well drained, and surface disturbances are restricted on the steeper slopes.

Soil compaction would occur from logging operations, but this impact would be minor. Recovery is anticipated to be rapid.

Impacts arising from slash disposal would depend upon the method that was used. If the slash is lopped and scattered, impacts would be beneficial. This method would insure adequate ground cover to protect the soil from raindrop impact and surface runoff.

However, if burning is the prescribed method of slash disposal, the mineral soil would be exposed and erosion would increase.

In addition to a decrease in ground cover by burning, significant amounts of nitrogen, phosphorus, and sulfur could be lost through volatilization or increased erosion. However, the availability of potassium, calcium and magnesium could increase through burning. The productivity of the land would probably not be impaired by burning.

Water

Timber harvesting would impact the hydrologic resources on and downstream of the Black Tail Unit. The intensity and duration of impact would vary depending on the treatment (severity of vegetal cover change), exposure and compaction of the mineral soil, and the proportion of the watershed affected (Megahan 1972, Stone 1973). Timber harvesting affects the water resource by influencing various hydrologic processes.

Interception is the process whereby vegetation interrupts the fall of precipitation onto the soil surface. The precipitation that enters the tree canopy may adhere to leaves and branches. Some of the moisture then evaporates back into the atmosphere, some drips to the ground (through fall) and some flows down stems to the ground (stemflow). Interception by conifers may amount to 30 percent of the annual precipitation. Timber harvest would decrease interception possibly resulting in increased streamflow. The interception loss can last 50 years or more.

Snow accumulation and snow melt rates are markedly affected by timber harvesting. Snow accumulations are greatest in forest openings and their margins. In lodgepole pine type in Colorado, harvesting timber in narrow strips and small patches increased snow accumulation by at least 30 percent compared to the remainder of the forest. Forest cover delays snowmelt times by shading and thus extends the time snow is held in surface storage. Anderson (1969) estimated forest shading reduced melt rates by 40 percent. Although snow under the forest canopy lasts longer and melts later than snow in the open, it may melt more rapidly once it begins, potentially causing greater peak flows. This can be contributed to the higher daily temperatures later in the season. Increased water yields can be expected from clearcut areas due to reduced transpiration losses, greater unit-area concentration of snowmelt water, and greater year-to-year carryover soil moisture. This water yield increase may last for decades, i.e., until the forest vegetation and condition approaches pre-treatment condition.

Overland flow is essentially absent from mature undisturbed forests. It's generally dependent on infiltration capacity, storage opportunity, and rain fall intensity. Forest practices that reduce infiltration rate usually results in increase overland flow. Merely cutting trees does not affect infiltration capacities, however compaction and exposure of mineral soil does. This results from road building, and skidding and hauling of logs.
The amount of overland flow that occurs following logging seems to be directly related to the percent of soil exposed and compacted.

In summary, increased water yield would occur from logging the Black Mountain Unit primarily by reducing evapotranspiration and interception, increasing overland flow, and increasing snow pack. Increases in stream discharge would occur especially during the spring and early summer as snowpack melts.

Minimal water quality impacts would also occur. Logging roads and their unprotected cuts and fills are primary sources of sediment from forested watersheds. Movement of sediment downslope from a road is dependent on runoff volumes and velocities, availability of erodible soil, and the obstructions to sediment transport (Haupt 1959). Eroding stream channels are another significant sediment source. As stream discharges increase, i.e. water yields increased from treated areas, the channel banks may become overtaxed and erosion occurs. This increase channel erosion would occur until the streambanks stabilize.

Buffer strips are to be maintained along stream channels. These would function as sediment filters minimizing the quantity of sediment introduced by overland flow.

Vegetation

Timber

Approximately 32 acres would be removed from the production of timber because of the construction of permanent roads. The harvest of timber would reduce the average size of the stands and the average age. The stands would be younger due to the removal of the oldest age classes. Younger stands have positive benefits in that they are faster growing and healthier.

Harvest methods would leave healthy and phenotypically superior trees. A minor amount of physical damage would occur to the residual stand during the falling and skidding operation.

Range

Selective and clearcutting results in eliminating some of the competition between plants for space, nutrients and light. As a result there would be an increase in grasses, forbs and shrubs pending reestablishment of the tree canopy. This would create more species diversity and more available forage. Skidding results, in exposure of mineral soil making a better seed bed for grasses, forbs and shrubs. This may result in more short-term forage production. Increased livestock mobility resulting from new roads, and more open stands of timber, as well as, new forage production, may result in better patterns of utilization and indirectly some improvement in trend in some areas. Aspen regeneration may be enhanced.

Some insignificant amounts of vegetation would be temporarily lost due to skid trail, landing, and spur road construction and usage.

Approximately 32 acres would be lost to the production of vegetation for the foreseeable future due to the construction of 19 miles of new road.

Animals

Domestic

An unknown amount of additional forage would become and remain available to cattle pending closure of the tree canopy. Improved livestock mobility would result from new road construction and opening of the timber stands. This should result in additional forage being physically available to grazing. The additional roads and improved access would help to make range use supervision, livestock supervision and care, as well as range improvement maintenance more effective and efficient.

The increased livestock mobility resulting from new road construction may create problems with cattle drift from areas of customary use. This may result in a need for more riding by the operators to keep the livestock where they belong. The increased livestock mobility may result in more livestock pressure against existing fencing. The fence on the forest boundary is in poor repair in places. If the pressure increases, fence maintenance requirements would also increase.

Wildlife

Initial road construction, timber harvest and continuing contract administration would result in a large increase in human activity and noise on approximately 9,500 acres of BLM, Forest Service and private lands. The impact of human activity would significantly affect elk populations using the area. During road building and timber harvest activities, studies have found that elk usually move until topography provides an effective visual and sound barrier. This can be a distance of several miles.

Forage production for deer, elk and small herbivores would increase as the forest canopy is opened to allow production of herbaceous plants. Wildlife species associated with a dense lodgepole pine forest would decrease. The more common of these include the pine squirrel, several woodpeckers, nuthatches, sapsuckers, and goshawk. Clearcutting would affect these species most, while partial cutting would only cause a minor impact. Conversely, chipmunks, deer mice, mountain bluebird, mountain chickadee, and sharpshinned hawk are some species likely to benefit from forest openings.

Fisheries

Impacts on fisheries would not be measurable. The increase in sediment load to Rock Creek is estimated to be slight, and of short duration. Late season flows may increase, benefiting the fishery by helping to keep water temperature lower during the hottest times of the year.

Cultural Resources

No impacts would occur to cultural resources or provisions have been made to mitigate impacts.

Visual Resource

The proposed action for road construction, timber removal, slash disposal, etc. would initiate the first substantial alteration of the mountain landscape from its natural state. The degree of impact would result from the cumulative effects of road construction, thinning, patch cuts and clear-cuts; each would have to be specifically located on the ground and evaluated by the Visual Contrast Rating.System to determine their influence on the various visual zones, especially the "partial retention" zone.

Visual impacts related to logging operations have short-term and long-term impacts: the former are normally more noticeable and persist until revegetation is firmly reestablished. All of the affect visual classes and landscapes stipulate that proposed alterations should repeat the form, line, color and texture patterns of the existing landscape, so that the visual appearance of the change would be those of natural occurrence within the surrounding area. Once these general guidelines have been incorporated, the duration of the "short-term" period is reduced, and the long-term problems are essentially eliminated.

Recreation Resources

The primary recreation impact is a loss of naturalness due to road construction and tree removal. For a discussion of the visual impact, see the Visual section. Loss of naturalness may result in a loss of recreation opportunities because many primitive recreation activities such as backpacking are based on a natural

environment. However, tree removal may increase browse species and open up the forest stand which could increase wildlife viewing and hunting opportunities. Off-road-vehicle opportunities may also be enhanced because of the increased number of roads. Again, vehicle access would have to be from the adjacent private lands. Overall, primitive recreation activities would tend to decrease while motorized activities would increase if the proposed action is implemented.

Social Conditions

Any decision affecting the allocation of resources has social implications. The forest resource base is shrinking, demand for all resources is increasing; this causes conflicts in social attitudes, i.e. environmental concern versus resource development and special interest versus special interest.

The Wilderness Preservation Act of 1964, the National Forest Management Act of 1974 and the Federal Land Policy and Management Act of 1976 all lend direction to identifying and establishing land for wilderness use. In Colorado, in 1979 the U.S. Forest Service identified 1,959,523 acres that have been recommended to Congress for inclusion in the wilderness system. Presently the BLM is studying 815,048 acres of public lands that may be suitable for wilderness use. This represents a significant reduction in the timber resource base. This shrinking timber production base means that the remaining timber land would become even more important to society as our population and resource demands grow. For this reason management and harvest of all our forest lands, including Black Mountain-Little Whiskey Creek area is socially important. This sale should generate positive social reactions. Environmental protection has been thoroughly examined and public input has come through the Forest Service Blacktail Environmental Impact Statement and Land Use Plan (USDA 197). Adjacent landowners have been initially receptive since it affords an opportunity for them to improve their roads and harvest their timber resource.

Economic Considerations

This proposal would have significant short-term and long-term, positive, economic impacts. The more important ones include the sale of timber products, more efficient administration for grazing, fire and other land management functions.

The Forest Service (USDA-Forest Service Res. pap. RM-92 1975) estimated that $122,000 and 9-man years of employment are generated in the local economy for every 1 million board feet of timber harvested. This sale of 7 million board feet represents 27 to 28 percent of the total combined annual production of the two largest lumber mills in the market area. Both mills produce far below capacity. This is partly due to available timber supply. The Kalibab mill at Eagle processes about 13 million feet annually but has a capacity of 20 million feet annually. Thirteen million feet is about what is offered by the White River National Forest. One to two million feet change in availabe timber could mean the difference between profit or going out of business for this mill.

Land Uses

Current land uses include livestock grazing, deer and elk hunting, and snowmobile touring.

A recent inventory has eliminated this area from wilderness designation. The impacts on these uses are discussed previously.

Adverse Environmental Effects Which Cannot Be Avoided

Climate and Air Quality

Minute, temporary adverse impact from dust particles in the air, and minor temporary local impact due to smoke from slash disposal.

Geology and Minerals

None.

Topography

Approximately 32 acres of land would be taken out of production because of roads.

Soils

Slight, local short-term adverse impact on, onsite erosion, permeability, and infiltration.

Slight adverse impact on soil fertility from burning slash.

Water

Minor short-term increase in overland flow in proportion to the amount of soil compaction.

Slight, short-term temporary decrease in downstream water quality due to sediment.

Vegetation

Moderate long-term change in standage composition.

Slight amount of physical damage to residual stand from removal of crop trees.

There would be a 2 to 7 year tree regeneration lag by waiting for natural regeneration.

Long-term loss of vegetation on roads, approximately 32 acres.

Animals

Increased livestock mobility would require increased supervision, and fence maintenance.

There would be a moderate, seasonal increase in stress to wildlife by human activity. There would not be any adverse impact on fisheries. There would be a decrease of overmature lodgepole pine habitat.

Cultural Resources

No impacts. Clearance is pending and any impacts to a cultural resource would be mitigated.

Visual Resource

Change in naturalness of the area.

Visual change by introduction of line that sometimes would not be subordinate to landscape.

Temporary impact from color change not subordinate to existing color because of logging slash.

Recreation Resource

Loss of naturalness due to roads.

Developed recreation opportunities would be limited due to Forest Service road closures to motor vehicles.

Social

None.

Economic

None.

The Relationship Between Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity

Short-term use of this area provides wood products and causes impacts associated with soil disturbance, visual change and a loss of natural solitude. These changes may persist from 2 to 20 years.

By changing the density of the trees the number and size of herbaceous plants would increase having an effect for approximately 15 years. When the age class of the timber is lowered by removing old growth and through thinning, long-term productivity can nearly be doubled due to the faster growth that occurs in younger stands.

Through the application of environmental protection measures most adverse impacts are short-term and slight or minor in their impact. Long-term productivity can be greatly enhanced and many short-term benefits are realized in the form of increased forage, less insect, disease, and fire risk and increases in water yield and snow packs.

Irreversible or Irretrievable Commitments of Resources Should the Alternative Be Implemented

A minor, unmeasured amount of soil would be eroded and is irretrievable. Approximately 32 acres of land would be taken out of production by roads. By intention these roads would be permanent and thus this use of the land is irretrievable. Trees are a renewable resource and retrievable however they are not immediately retrievable and removal of old growth timber changes that type for a period of 80-140 years.

The visual character is most obviously affected. Two years elapse before grasses and forbs are reestablished. The roads remain a visual impact as long as they are maintained. The visual character of a forest returns in about 20 years.

The Forest resource is retrievable but is mentioned because it is not immediately retrievable it is irretrievable for a long period of time.

Possible Conflicts Between the Alternative and the Objectives of Federal, Regional, State and Local Land Use Plans, Policies and Controls

The preferred alternative has been designed to incorporate the local land use plans which were developed according to accepted and established policies. The Forest Service Plan has received public input and review, for these reasons conflicts should be minimal.

The one possible source of conflict that may remain is the proposed status of the road as proposed in the alternative. Closure to vehicle use of Forest Service roads by the public may be in conflict with multiple use philosophies of both agencies and precipitate questions from the public.

No Action Alternative

Impacts on:

Climate and Air Quality - none

Topography - none

Soils

A slight amount of erosion presently occurring would continue.

Water

Positive benefits from impacts of the preferred action would not be realized and adverse impacts from the preferred action would be avoided.

Vegetation

Timber

As the timber reached pathological rotation, slash would accumulate, increasing the risk of fire. Insects and disease are more prevalent in overmature and decadent stands. Economic benefits would not be realized from the sale of the timber. Large amounts of dead material are unsightly and can detract from the aestehetics.

Range

No additional forage would be produced and species diversity would remain static.

Aspen stands will continue to degenerate and proceed toward a conifer climax.

This will be accompanied by a decrease in forage production on these sites.

Animals

Domestic

No increase in cattle drift should occur. Less livestock pressure on fences may necessitate less maintenance. No additional forage will be made available.

Where poor access exists, range use supervision, care and supervision of livestock as well as fence maintenance would remain difficult.

Wildlife negative impacts of the proposed action would not occur. The current wildlife population would remain stable, favoring birds and mammals associated with a mature lodgepole pine forest. Increased herbaceous vegetation would not occur and aspen inclusions would gradually become coniferous forest with very little habitat diversity.

Cultural Resources

None.

Visual

Some degradation of the visual resource could occur should the green aspect of the forest be lost to wild fire, large insect or disease outbreaks or large acreages of dead timber due to natural mortality.

Recreation

Recreation use would be limited to existing use.

Social Conditions

Agencies may receive criticism for failure to manage the timber resource.

Economics

Economic benefits described under impacts of the proposed action would not be realized. This could also have social implications.

Land Uses

Land would retain more natural aspects.

Uses would be limited to present uses. There would be no use made of the timber resource.

The 32 acres to be devoted to roads would not be lost to vegetation production for the foreseeable future.

Adverse Environmental Effects Which Cannot Be Avoided Should The Alternative Be Implemented

These are discussed previously under "impacts" but are summarized below.

Soils

A slight amount of erosion presently occurring would continue.

Water

Positive benefits from impacts of the preferred action would not occur. Negative impacts of the preferred alternative would be avoided.

Vegetation

Fire risk and slash would increase annually. Insect and disease incidence would increase.

Forage plant species diversity would remain static or deteriorate. Aspen stands would be expected to disappear through successional change. Forage production would decrease on these sites.

Positive benefits of the preferred alternative would not be realized. Wildlife habitat diversity would be reduced and gradually less wildlife forage would be produced in the absence of a national catastrophy. Negative impacts of the preferred alternative would not occur.

Animals

Human presence and activity would not occur and animals would not be displaced or have added stress.

Visual

Gradual degradation of visual resource would occur as overmature timber dies causing a loss in the green aspect of the landscape. Large amounts of dead timber can be visually undesirable.

Recreation

There will be limited potential for future recreation development.

Social Aspects

Agencies may receive criticism for failure to manage the timber resource.

Economics

There are no economic benefits from timber in this alternative.

Land Uses

Multiple uses would be limited to existing use under this alternative.

The Relationship Between Short-Term Uses of Man's Environment and the Maintenance and Enhancement of Long-Term Productivity

Present uses would continue with some gradual decrease in forage. The present naturalness would be maintained but at the expense of long-term production of both forage and timber. Productivity would most certainly be decreased. Old decadent stands do not grow fast enough to offset normal mortality losses.

Under this alternative the vegetative resource would not be maintained or enhanced.

Irreversible or Irretrievable Commitments of Resources Should The Alternative Be Implemented

If the timber is allowed to reach pathological rotation volume and value becomes irretrievable and the same thing results from a decision to take no action.

Possible Conflicts Between the Alternative and the Objectives of Federal, Regional, State and Local Land Use Plans, Policies and Controls for the Area

The no action alternative conflicts with multiple use policy guidelines of both agencies, the Black Tail Land Use Plan and Environmental Statement and the Black-Mountain Forest Management Plan.

Energy Requirements and Conservation Potential of the Various Alternatives

The preferred action would require energy in the form of gasoline and diesel fuel for operating log trucks, bull dozers, chain-saws and passenger trucks. This alternative can make the most efficient use of energy because it is a combined sale that eliminates move-in cost and coordinates the construction of one common transportation route or system.

The action will also make an undetermined amount of fuelwood available to be marketed, which would supplement the use of fossil fuels.

The consumption of fuel by implementing this action would produce seven million board feet of lumber or other wood products for human benefit and will allow management of the forest resource.

The no action alternative, would conserve the energy that would be expended by the preferred alternative; however, forest management opportunities and the opportunity to make more fuelwood available would be foregone.

Clearcutting Alternative

Impacts (Environmental Consequences)

The impact of this proposal will be the same as those discussed in the preferred alternative with the exception of vegetation, visual, soil, watershed and economics.

Vegetation

The consequences would be the same as for the preferred alternative except that the overstory of trees would be clearcut, regeneration of lodgepole pine would be expected, no damage would occur to a residual stand and understory forage production would have a larger increase.

Insect and disease problems would be minimized.

Visual

The clearcutting technique would not meet the requirement of the visual classification of the area.

Soil and Water

A greater degree of soil movement would occur in proportion to the increase in soil disturbance, however , approximately 2/3 less acreage would be involved than is with the preferred alternative. Also a larger increase in run-off from the affected areas would be expected.

Economic Considerations

The main difference here is cost to the government to offer the sale, approximately 75 percent of the sale marking costs could be avoided by clearcutting. Also, logging costs would be reduced an undetermined but significant amount because the volume is more concentrated and efficiency goes up.

Adverse Impacts Which Cannot Be Avoided

These are the same as for the preferred alternative except that soil movement and over land flows would increase proportionately. Visual requirements would not be met.

All other aspects of this alternative would be the same as for the preferred alternative except that certain segments of society are more opposed to clearcutting and energy requirements would be slightly less because of the improved efficiency due to greater volumes per acre.

Appendix A.

Interagency Agreement
Between
Bureau of Land Management, U.S. Department of Interior
and
Forest Service, U.S. Department of Agriculture

This INTERAGENCY AGREEMENT made and entered into by and between the Bureau of Land Management, Grand Junction District Manager; herein referred to as the B.L.M., and the Forest Service, Routt National Forest Supervisor; herein referred to as the F.S., under the provisions of the Act of June 30, 1932 (31 U.S.C. 686).

WITNESSETH:

WHEREAS, the timber on the lands described on the exhibit A attached hereto and made a part hereof is administered either by the B.L.M. or the F.S.; and

WHEREAS, it is desirable to include timber administered by the B.L.M. and timber administered by the F.S. as a portion of a single timber sale to be offered for sale by the F.S. in the fiscal year 1981:

Now, THEREFORE, the two parties hereto agree as follows:

1. The F.S. and B.L.M. will assume individual responsibility for sale layout, road location and volume determination. The said timber shall be offered for sale on the basis of combining both agencies' field work. The F.S. will assume responsibility for all the engineering services for survey, design, estimating, and construction supervision of the system roads to be constructed under this timber sale. If appropriated funds are not adequate to finance construction supervision of B.L.M. roads, the B.L.M. will contribute to this cost, not to exceed $2000.

2. The F.S. and the B.L.M. shall jointly participate in the development of a logging operations plan.

3. Each agency shall obtain rights-of-way from the other for system roads to be constructed under terms of this timber sale, where said roads are needed for efficient system development. Such rights-of-way and road use license shall be obtained under existing procedures currently in effect between the parties.

4. The purchaser shall be responsible for the maintenance of all roads constructed under the terms of the timber sale contract. The purchaser shall be responsible for construction of all temporary spur roads on B.L.M..

5. The F.S. shall appraise the entire sale volume and prepare the contract for the entire sale on standard F.S. timber sale contract forms. B.L.M. and the F.S. will jointly review both the appraisal and the contract prior to advertising the sale.

The timber shall be offered for sale on the basis of contract stumpage rate with escalation except for when the sale appraises deficit. A sale that is deficit (indicated stumpage lower than base rates) when appraised at normal profit will be offered on a flat rate basis. To satisfy individual agency accounting requirements, volumes and values of timber administered by F.S. and B.L.M. shall be separately identified by mill yard scaling as stated in paragraph #6. Separate volume identification shall be used for interagency purposes only and shall not appear in the timber sale contracts.

6. Upon completion of bidding the F.S. shall sample log scale the timber from the sale area as it is removed. The F.S. and B.L.M. volume shall be kept separate. The actual scaled volume and the current contract rates shall be used to calculate each agency's share of the total proceeds from the timber sale. The proceeds will be separated on a percentage by species basis, calculated from the sample cruise in the following manner:

EXAMPLE:

Species	LP	DEAD	Sale Total
F.S. Volume M.B.F. (cruise)	500	400	900
B.L.M. Volume M.B.F. (cruise)	500	600	1100
Bid Value per M (dollars)	12	6	
F.S. Share of Bid	6000	2400	8400
B.L.M. Share of Bid	6000	3600	9600
TOTAL			18000
F.S. Share	50%	40%	
B.L.M. Share	50%	60%	

The actual computed percentage will appear in the contract file and made a part of such file upon the sale of the timber.

7. The F.S. shall advertise and conduct the proposed timber sale offering, and shall award the sale contract to the highest bidder.

8. The F.S. shall administer the timber sale contract, billing the purchaser as necessary and making all collections specified in the contract.

9. Annually the F.S. shall transfer to the B.L.M. its share of receipts, calculated by the scaled volume and current contract rate described in paragraph 6 (above). Quarterly the F.S. shall furnish the B.L.M. with a record of the volume and value of material removed during the quarterly period.

10. The F.S. and B.L.M. shall jointly prepare the slash disposal plan and estimated cost for inclusion in the appraisal. The F.S. and B.L.M. shall each be responsible for slash disposal on their area of responsibility.

11. The contract shall contain provisions for performing erosion control measures on the contract area.

12. Each agency shall plan and execute needed reforestation measures on lands under its administration.

13. B.L.M. will deposit with the F.S. $13,900 as reimbursement for their share of costs for survey, design and engineering of B.L.M. roads, timber appraisal, timber sale contract preparation and administration and scaling. Not less than 50% of this amount to be paid in FY 1981 and the remainder in FY 1982.

    In the event that the purchaser elects to turn the road construction back to the Forest Service, the F.S. will contract for the construction of all roads except roads on B.L.M. The timber sale prospectus will state that only the roads on National Forest land will be eligible for purchaser-elect construction.

    Temporary roads which are needed by B.L.M. will be costed against B.L.M. timber. B.L.M. standard clauses for these roads will be inserted into the timber sale contract.

14. B.L.M. will prepare an environmental assessment report. F.S. will review and jointly approve the E.A..

15. This agreement shall remain in full force and effect until all work herein contemplated is completed and all obligations stated herein or in the timber sale contract are satisfied: that is, until the purchaser has been released, all sale proceeds have been distributed, slash plan has been fulfilled and road maintenance and erosion control measures have been completed. If no contract for the sale of timber is entered into, this agreement shall be terminated upon mutual agreement of the parties.

IN WITNESS WHEREOF, the parties hereto have executed this agreement as of the last date written below.

April 25, 1980
DATE

David A. Jones
District Manager
B.L.M.

May 1, 1980
DATE

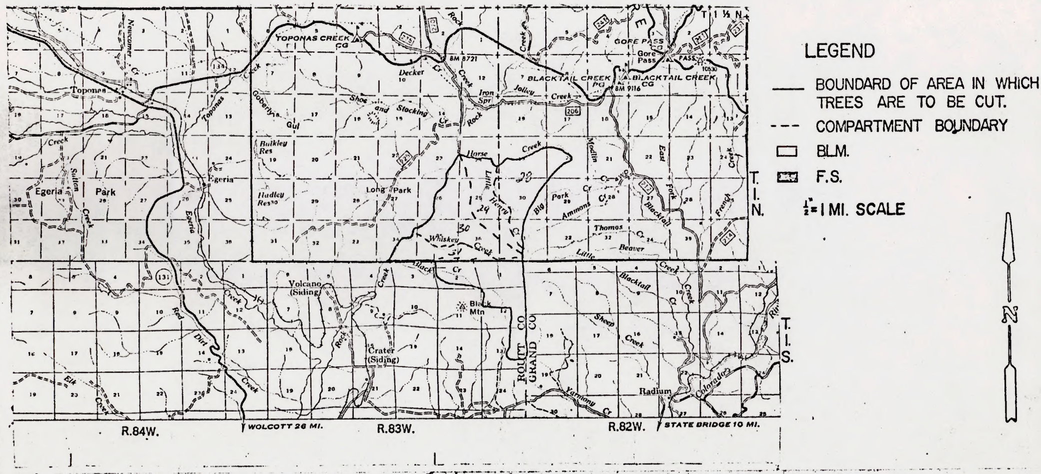
Jack Weiss
Forest Supervisor
Routt National Forest

DATE 1-12-80

FIGURE 1

ENVIRONMENTAL ANALYSIS MAP
WHISKEY CREEK - BLACK MOUNTAIN

EXHIBIT - A



Appendix B

Silvicultural Prescriptions for Forest Service Stands and BLM Stands

Introduction

Stand maps and prescriptions for the various stands are presented here. The formats used fit the way each agency presented its data so they are different but the same kind of information is presented.

From a silvicultural point of view clearcutting is a sound and practical way to harvest lodgepole pine, however, in order to accomodate other important uses a form of partial cutting is most generally prescribed. The primary purposes of the prescriptions to be used are to maintain a continuous forest cover of lodgepole pine while minimizing the limitations of partial cutting because of sivical requirements, stand conditions, wind, insects, and disease.

Stand location - BLM stands numbered 112, 123, 130, 154, 154A, 158 and 159 on the type map for the Black Mountain Forest Management Plan.

Stand Description - These are 120-140 year old stands of well stocked, mature and overmature lodgepole, saw timber, 9" to 15" diameter at breast height. They are characterized by single stories, even aged, varying in age from place to place but uniform within any given stand. Small patches or a scattering of aspen may be present. They are generally insect and disease free.

Treatment - Treatment will consist of removal of 30 percent of the basal area using individual tree selection and patch cuts 2-3 times the average tree height in size, where windfall risk is low.

In moderate windfall risk situations 20 percent of the basal area will be removed and in high windfall hazard areas the stand will be clearcut in 5 acre blocks or less or left untreated. This is an intermediate cut.

Acreage and Volume - 450 acres will be treated in these stands. 1,575 MBF will be removed.

Stand Location - BLM stands numbered 113, 114, 127, 128, 129, 155, 156, 157, 162, 163, 164 and 169 on the type map for the Black Mountain Forest Management Plan.

Stand Description - These are 120-140 year old stands of medium stocked mature and overmature lodgepole saw timber, 9 to 15 inches diameter at breast height. The overstory in these stands resembles single story stands but are two stories. The stocking of the overstory may be irregular, but overall stocking is uniform. The second story may be poles, saplings or seedlings. Trees in the top story tend to be more wind firm than in single story stands. These stands contain pockets of dead material and very localized insect or disease problems.

Treatment - In low windfall risk situations, 40 to 50 percent of the basal area will be removed, with emphasis on removal of intermediates. This cutting will be heavy enough to be considered a regeneration cut, but marking will follow the rules for individual tree selection. The cut will be distributed over the entire area. In moderate windfall risk stands 30 percent of the basal area will be removed on an individual tree basis. Codominant and intermediate trees will represent at least one half of the basal area removed.

Provisions will be made to salvage blowdowns. In high windfall risk stands, clearcut openings up to 5 acres will be interspersed with uncut areas.

Acreage and Volume -

280 acres will be treated.
980 MBF will be removed.

BLM Stands numbered, 118, 119, 120, 121, 122, 124, 125, 126, 153, 161, 165, 166, 167, 168, 170, on the type map for the Black Mountain Forest Management Plan.

Stand description - These are pole size stands of lodgepole, with an average diameter breast high of 8.7 inches. They are to be commercially thinned using separate pole sales after this sale is terminated. The stands are 80 to 110 years old and generally disease and insect free.

Treatment - They will be entered with a partial cut where 8 and 9 inch diameter trees exist. Individual tree selection rules will apply. Usually not ore more than 20 percent of the basal area will be removed. Stands where the trees are 5" to 8" diameter breast high will not be treated by this sale.

Area	Volume
537 ac. will be treated.	250 MBF will be removed.

Stand location - BLM stands numbered 112 and all mistletoed stands in the BLM portion of the sale area.

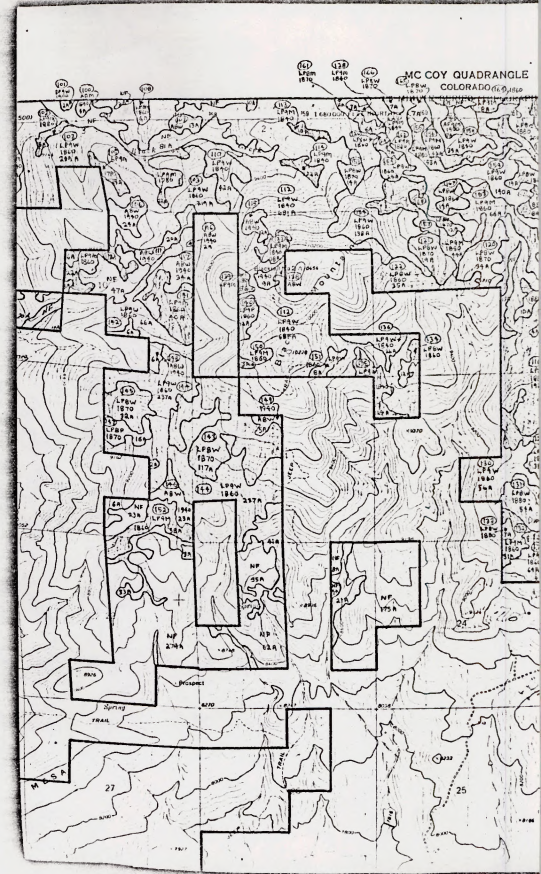
Stand Description - This lodgepole is a heavily mistletoed, 160 acre portion of the stand. Trees are over mature, stocking is poor to medium. There is a high volume of mortality, a high percentage of defect and little advance reproduction.

Treatment - Clear cut long corridors on perimeter of infected stand to separate it from healthy stands and intersperse clearcuts up to 10 acres in size over one half the area. Remove the remaining stand within 10 years and sanitize reproduction at that time.

Other small infections in other stands will be clearcut considering cutting guides established for that stand.

Acreage and Volume -

160 acres will be treated. 200 MBF will be removed.


MC COY QUADRANGLE
COLORADO
161 LP9M 1870
128 LP9M 1840
166 LP8W 1870
101
100 ABM
108
NF
102 LP9W 1860 209A
113 LP9M 1840
114 LP9M 1840
110 LP9W 1840
109 LP9W 1860 219A
112 LP9W 1840 481A
81A
42A
116 ABW 1940 2A
ABW 1940 29A
ABW 1940 3A
NF 47A
LP9M 1860
LP9M 1860 ACR
66A
142
112 LP9W 1840 68FA
150 LP9M 1860
151
154 LP9W 1860 138A
122 LP8W 1860 35A
121 LP8W 1870 19A
120 LP8W 1870 39A
136 LP9W 1860
134 LP8W 1860
159 LP9W 1860
163 LP9M 1860
148 ABW 1940
LP9W 1860 237A
145 LP8W 1870 32A
147 LP8P 1870 16A
149 1940
143 LP8W 1870 117A
144 LP9W 1860 237A
146 ABW
152 LP9M 1860 23A
1940 23A
6A NF 23A
38A
33A
NF 279A
NF 35A
NF 62A
41A
NF 175A
21A
130 LP9W 1860 54A
131 LP8W 1880 54A
133 LP8W 1880
LP9M 1860 51A
Prospect
Spring
TRAIL
MESA
TRAIL
27
25
24
10
2

COMPARTMENT PRESCRIPTION

549-30
Rock Creek

Routt National Forest

Yampa Ranger District

Prepared By

9/28/79
Date

Approved By

11/21/75
Date

Compartment Description

Compartment 549-30 lies in T1N, R82 & 83W of Routt County Colorado. It is bordered on the south by Whiskey Creek and on the west by Rock Creek. The northeast boundary lies along the divide between Rock Creek and Little Henry Creek.

Currently, the only access to the compartment is by foot, horseback or jeep trail.

The compartment is primarially composed of young growth lodgepole pine which developed under aspen following a large fire.

Stands are large and variable. The young pine is widely dispersed with aspen, old growth pine and Douglas Fir, as well as extensive dense stands of small lodgepole pine, poletimber and saplings.

Windrisk throughout the area ranges from moderate to high.

Ground fuels are light.

Prescription Summary

Detailed prescriptions for each stand are attached. They call for the following action.

Timber Harvest

Shelterwood and patchcut - 365 acres yielding 1.4 MMBF

Thinning

Commercial posts and poles - 313 acres

Reforestation

None

Salvage

None

No Treatment

For 802 acres of nonforest, aspen and marginal areas.

All timber harvest is expected to be in conjunction with the Little Whiskey Timber Sale.

A stand map and map of proposed transportation system are attached.

Compartment #540-30 Stand # [illegible]

Type [illegible]		Acres	159
Stand Size		Stand Origin	
Type of survey	[illegible]	Land Use Class	
Component			
Slope Position		Elevation	
Slope		Aspect	
Distribution		Structure	
Site Index		Survey Yield	
Windthrow Hazard		Soil Erosion	

Softwood/ Acre

Volume		Basal Area	
Growth(cub.Net)		DBH = (Ave.)	
S/ S Stems			
Pole Stems			
ST Stems			

Hardwood/ Acre

Volume		Basal Area	
Growth(cub.net)		DBH (Ave.)	
S /S Stems			
Pole Stems			
ST Stems			

Stand Description & History

Detailed Prescription, T.S.I. Needs

Non Forest - No Treatment

TM Plan- RAM Class

RAM Prescription

RAM Yield

Activity (from TM Plan EIS)

Schedule- RAM Decade:

Prescription

MUM --Coordination

Constraints

Selected Activity- Method

Constraints

YIELDS / ACRE Treatment ____________

	LEAVE	HARVEST	TOTAL
Acres			
# Stems (Poles, ST)			
Basal Area			
MBF			
Cunits			
Dead MBF			

Total Cut Vol. ____________ (Softw.) Cut Vol. ____________ (HARDW.)

Compartment # [illegible] Stand # 02

Type	[illegible]	Acres	[illegible]
Stand Size	[illegible]	Stand Origin	
Type of survey	[illegible]	Land Use Class	
Component			
Slope Position		Elevation	
Slope		Aspect	
Distribution		Structure	
Site Index		Survey Yield	
Windthrow Hazard		Soil Erosion	
Softwood/ Acre			
Volume		Basal Area	
Growth(cub.Net)		DBH = (Ave.)	
S/ S Stems			
Pole Stems			
ST Stems			
Hardwood/ Acre			
Volume		Basal Area	
Growth(cub.net)		DBH (Ave.)	
S /S Stems			
Pole Stems			
ST Stems			

Stand Description & History

ASPEN - SMALL SAWTIMBER

Detailed Prescription, T.S.I. Needs

NO TREATMENT

TM Plan- RAM Class

RAM Prescription

RAM Yield

Activity (from TM Plan EIS)

Schedule- RAM Decade:

Prescription

MUM --Coordination

Constraints

Selected Activity- Method

Constraints

YIELDS / ACRE Treatment ________

	LEAVE	HARVEST	TOTAL
Acres			
# Stems (Poles, ST)			
Basal Area			
MBF			
Cunits			
Dead MBF			

Total Cut Vol.__________(Softw.) Cut Vol. __________(HARDW.)

STAND PRESCRIPTION SUMMARY

Compartment # 54930 Stand # 03

Ty	Lodgepole	Acres	300
St Size	Sawtimber	Stand Origin	01
Type of survey	933	Land Use Class	20
Component	Stand.		
Slope Position	Ridge Top	Elevation	---
Slope	0-15	Aspect	W
Distribution	-10	Structure	-10
Site Index	28	Survey Yield	--
Windthrow Hazard	Moderate	Soil Erosion	-01

Softwood/Acre

Volume	14667	Basal Area	142
Growth(cub.Net)	19	DBH (Ave.)	10.9
S/S Stems	225		
Pole Stems	-40		
ST Stems	-200		

Hardwood/Acre

Volume		Basal Area	
Growth(cub.Net)		DBH=(Ave.)	
S/S Stems	300		
Pole Stems			
ST Stems			

Stand Description History

Approximately 75 acres of this stand are inoperable due to steep slopes. The remainder of the stand is composed of the following:

1. Extensive areas of young and old growth LPP that developed under aspen following fire (≈ 105ac.)

2. Pockets of small poles and large saplings (≈ 70 ac.)

3. Scattered pockets of old growth LPP that survived the fire. (≈ 30 ac.)

4. Scattered aspen patches with small sawtimber. (≈ 20 ac.)

Detailed Prescription, T.S.I. Needs

Eac omponent will be treated as follows:

1. Young/old growth mix-Remove overmature and high risk trees.

2. Old Growth- Remove through patch cuts and group selection, to stimulate reproduction and reduce mistletoe risk.

3. Poles-Commercially thin following sale.
4. Aspen - No treatment this decade.

5. Steep slopes-No treatment.

Timber and Other Resource Coord. Sum.

RAM Prescription
ITM - Shelterwood and Patch cut

RAM Yield

RAM Class

RAM Decade

Other Resource Coord. and Constraints

No harvest adjacent to either creek.

Protection Measures

WIZ - Whiskey Creek & Rock Creek.

YIELDS/ACRE	LEAVE	HARVEST	TOTAL
Acres	165	135	300
# Stems (Poles, ST)	127	113	240
Basal Area	92	50	142
MB	8.9	5.8	14.7
Cu			
Dead MBF			

Total Cut Vol. 780 MBF (Softw.) Cut Vol. ____________ (HARDW.)

STAND PRESCRIPTION SUMMARY

Compartment # 54930 Stand # 04

Lodgepole	Acres 505
Size Poletimber	Stand Origin 01
Type of Survey 933	Land Use Class 20
Component Standard	
Slope Position Ridge Top	Elevation ---
Slope 0-15	Aspect W
Distribution 10	Structure 10
Site Index 38	Survey Yield 32
Windthrow Hazard Mod.	Soil Erosion 01

Softwood/Acre

Volume 7804	Basal Area 202
Growth(cub.Net) 86.7	DBH (Ave.) 7.7
S/S Stems 165	
Pole Stems 307	
ST Stems 291	

Hardwood/Acre

Volume -	Basal Area --
Growth(cub.Net)	DBH=(Ave.)
S/S Stems 15	
Pole Stems	
ST Stems	

Stand Description & History

Stand developed under aspen following fire. It is made up of the following components.

1. LPP poletimber in dense stands. (≈ 243 ac.)

2. Mixed stands of young and old growth in scattered pockets. (≈ 76 ac)

3. Scattered pockets of old growth LPP that survived the fire but is now rapidly deteriorating. (51 ac.)

4. Inoperable terrain. (135 ac.)

Detailed Prescription, T.S.I. Needs

Each component will be treated as follows:

1. Poletimber - Commercial thin following timber sale.

2. Mixed young/old growth - Remove overmature and high risk trees.

3. Old Growth - Patchcuts to eliminate mistletoe mistletoe and stimulate reproduction.

4. Inoperable terrain - No treatment.

Timber and Other Resource Coord. Sum.

RAM Prescription Intermediate patchcut.

RAM Yield

RAM Class

RAM Decade

Other Resource Coord. and Constraints

No harvest along creeks.

Protection Measures

WIZ - Along Whiskey Creek and Rock Creek.

YIELDS/ACRE	LEAVE	HARVEST	TOTAL
Acres	447	58	505
# Stems (Poles, ST)	275	114	389
Basal Area	136	66	202
MBF	4.6	3.2	7.8
Cu			
Dead MBF			

Total Cut Vol. 186 MBF (Softw.) Cut Vol. ______ (HWDW.)

STAND PRESCRIPTION SUMMARY

Compartment # 54930 Stand # 05

.ype	Douglas Fir	Acres	192
Stand Size	Sawtimber	Stand Origin	01
Type of survey	933	Land Use Class	20
Component	Stand		
Slope Position	Ridge Top	Elevation	---
Slope	46-55	Aspect	W
Distribution	10	Structure	30
Site Index	48	Survey Yield	74
Windthrow Hazard	High	Soil Erosion	01

Softwood/Acre

Volume	5472	Basal Area	109
Growth(cub.Net)	19.4	DBH (Ave.)	9.5
S/S Stems	315		
Pole Stems	71		
ST Stems	459		

Hardwood/Acre

Volume	-	Basal Area	-
Growth(cub.Net)	-	DBH=(Ave.)	-
S/S Stems	225		
Pole Stems			
ST Stems			

Stand Description & History

Stand is composed primarily of Douglas fir with scattered aspen and LPP. Many large diameter trees are present, but most are badly fire scarred and many are cull.

Approximately 20 acres are inoperable or inaccessible.

etailed Prescription, T.S.I. Needs

Because of high windrisk, shelterwood system will be used [illegible] harvest. Approximately 15-20% of the basal area will be removed from ridgetop areas, and 25-35% in areas of lower wind risk.

nitial cut - 3 step shelterwood

Timber and Other Resource Coord. Sum.

RAM Prescription
Shelterwood-ITM

RAM Yield

RAM Class

RAM Decade

Other Resource Coord. and Constraints

No harvest along creek.

Follow Alexander's wind marking guides.

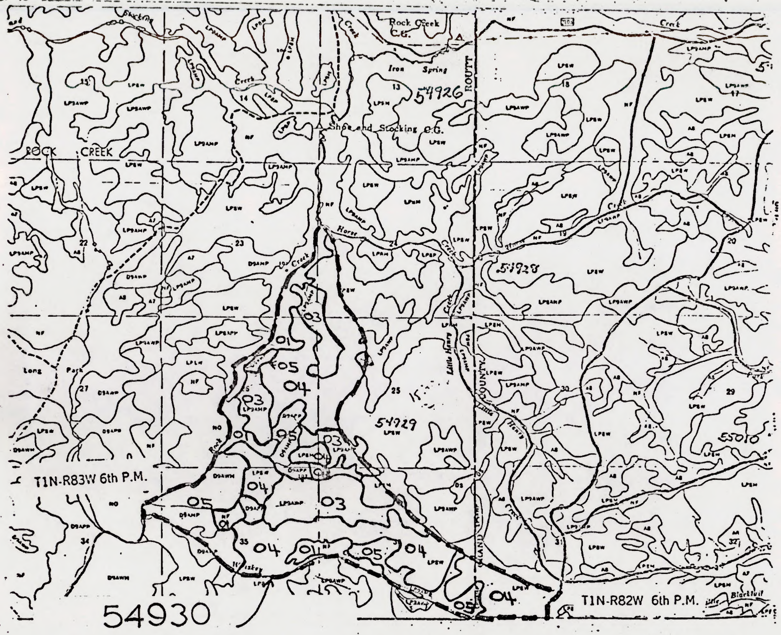
Protection Measures

WIZ - Along Rock Creek

Shelterwood system.

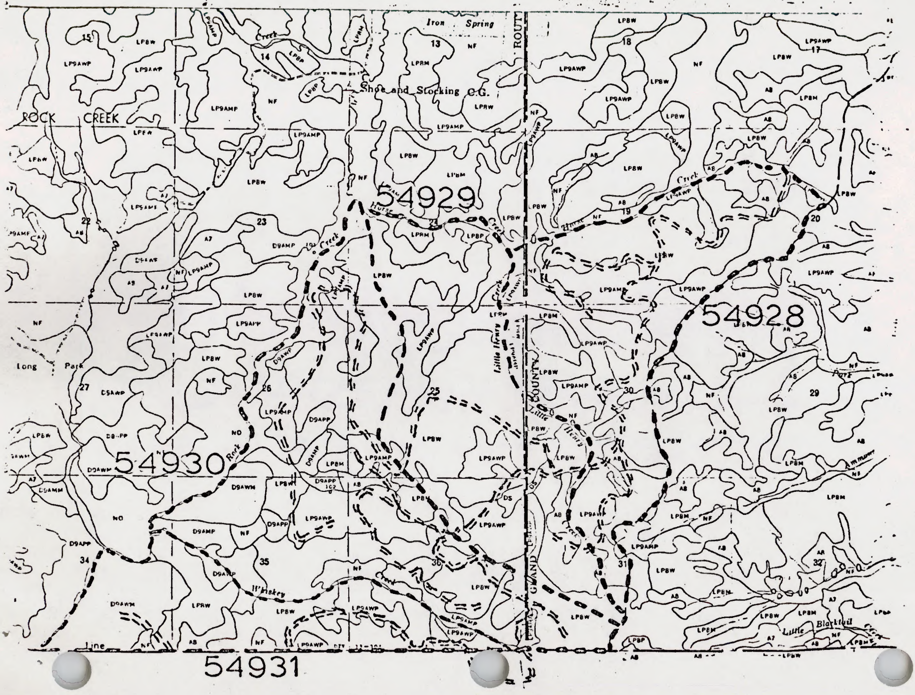
IELDS/ACRE	LEAVE	HARVEST	TOTAL
cres	20	172	192
Stems (Poles, ST)		27	
asal Area	82	27	109
BF	3.0	2.5MBF	5.5
Uni			
ead			

Total Cut Vol. 430 MBF (Softw.) Cut Vol. ____ (HARDW.)


Rock Creek C.G.
Iron Spring
54926
ROUTT
Shoe and Stocking C.G.
ROCK CREEK
Horse Creek
54928
Little Henry Creek
COUNTY
54929
55010
Long Park
03
01
05
04
03
01
05
03
04
05
03
04
01
05
04
05
04
TIN-R83W 6th P.M.
TIN-R82W 6th P.M.
54930

STAND MAP

LITTLE WHISKEY SALE
PROPOSED ROADS



COMPARTMENT PRESCRIPTION

54928
ROCK CREEK

Routt National Forest

Yampa Ranger District

RECEIVED
FEB 11 1980
BUREAU OF LAND MGMT.
GRAND JUNCTION

Prepared By

9/27/79
Date

Approved By

Date

Compartment Prescription

Compartment 549-28 is located in T1N, R82 and 83W of Routt and Grand counties. It is bordered on the west by Little Henry Creek, the north by Horse Creek, and the east by a ridge.

Access is by foot, horseback, or a jeep trail.

Young growth lodgepole pine which developed after fire makes up most of the compartment.

Extensive stands of lodgepole pine pole timber are found with small pockets of old growth pine and some small patches of aspen.

Windrisk is moderate to high. Ground fuels are very light.

Prescription Summary

Detailed prescriptions attached.

Timber Harvest

Shelterwood and patchcut 270 acres yielding 980 MBF.

Thinning

385 acres of commercial posts and poles.

Reforestation

None

Salvage

None

No Treatment

For 435 acres of nonforest, aspen, and marginal (steep) areas.

Timber harvest will be in conjunction with the Little Whiskey Timber Sale.

Attached: Stand map and proposed transportation system.

For Nonforest - Noncommercial Stands.

COMPARTMENT DATA ELEMENTS SUMMARY

Form I

Compartment No. 549 28

Stand No.	01				
Acres	155				
Type	Non Forest	and	Aspen		
Stand Size	—		Unsized		
Type of Survey	—		—		
Ground Land Use Class	NF		A		
Component	Special		Special		
Slope Position	L		L		
Elevation	—		—		
Slope	—		—		
Aspect	—		—		
Soil Erosion	—		—		
Productivity Class	—		—		
Site Index	—		—		
Structure	—		—		
Distribution	—		—		
Softwood/Acre					
Volume					
BA					
Growth					
DBH					
No Stem S/S					
No Stem Poles					
No Stem St					
Hardwood/Acre					
Volume					
BA					
Growth					
DBH					
No Stem S/S					
No Stem Poles					
No Stem St					

- No Treatment

C PARTMENT PRESCRIPTION DATA

Compartment # 549 28 Stand # 02

Type Lodgepole	Acres 384
Stand Size Sawtimber	Stand Origin
Type of survey	Land Use Class
Component Standard	
Slope Position Ridge Top	Elevation -
Slope 26 - 35 %	Aspect W
Distribution	Structure
Site Index 33	Survey Yield
Windthrow Hazard	Soil Erosion

Softwood/ Acre	
Volume 10784	Basal Area 157
Growth(cub.Net) 26	DBH = (Ave.) 9.1
S/ S Stems 245	
Pole Stems 139	
ST Stems 216	

Hardwood/ Acre	
Volume	Basal Area
Growth(cub.net)	DBH (Ave.)
S /S Stems	
Pole Stems	
ST Stems	

Stand Description & History

Pine → Fire → Aspen → Pine

Area now consist of large patches of poles (≈ 95 ac.), scattered pockets of old growth that survived the fire (≈ 60 ac.), extensive old and young growth combined (≈ 130 ac.), and varrious small areas of Aspen (≈ 60 ac), and aprx. 40 acres non - forest.

≈ Total 385 Ac.

Detailed Prescription, T.S.I. Needs

Treat each component separately:

Old Growth - patch cut to eliminate mistletoe and stimulate reproduction

2) Young and Old Growth - remove high risk trees and overmature trees

3) Poles - no treatment at this time

4) Aspen - no treatment at this time

Aprx. 50 Acres { non workable slope, VRI Z.

TM Plan- RAM Class

RAM Prescription

RAM Yield

Activity (from TM Plan EIS)

Schedule- RAM Decade:

Prescription
PATCH CUT, ITM - SHELTERWOOD

MUM --Coordination

Constraints

Selected Activity- Method

Constraints

YIELDS /_ACRE Treatment

	LEAVE	HARVEST	TOTAL
Acres	245	140	385
# Stems (Poles, ST)/ac	484	66	550
Basal Area /ac	101	56	157 sq.ft.
MBF /ac	2110	3750 BF/ac	5860 ?
Cunits	—	—	—
Dead MBF (Sound)	—	—	—

Total Cut Vol. 525,000 BF (Softw.) Cut Vol. —— (HARDW.)

CC.PARTMENT PRESCRIPTION DATA

Compartment # 547 ZB Stand # 03

Type Lodgepole
Acres 485
Stand Size Poletimber
Stand Origin -
Type of survey -
Land Use Class -
Component Stand
Slope Position Ridge Top
Elevation -
Slope 26-35
Aspect N
Distribution -
Structure -
Site Index 35
Survey Yield -
Windthrow Hazard -
Soil Erosion -

Softwood/ Acre

Volume 7918
Basal Area 172
Growth(cub.Net) 29
DBH = (Ave.) 7.7
S/ S Stems 285
Pole Stems 205
ST Stems 309

Hardwood/ Acre

Volume
Basal Area
Growth(cub.net)
DBH (Ave.)
S /S Stems
Pole Stems
ST Stems

Stand Description & History

Pine → Fire → Aspen → Pine

This area has generally smaller pine and fewer patches of old growth and is located mostly on or near ridge tops.

1) Widely seperated patches of old growth ≈ 90 ac.

2) Extensive pole patches ≈ 290 ac.

3) Limited combined young and old growth ≈ 60 ac.

4) Small patches of Aspen ≈ 30 ac.

Nonforest 15 Ac

TM Plan- RAM Class

RAM Prescription

RAM Yield

Activity (from TM Plan EIS)

Schedule- RAM Decade:

Prescription
Patch Cut, ITM- Shelterwood

MUM --Coordination

Constraints

Selected Activity- Method

Constraints

Detailed Prescription, T.S.I. Needs

4 Seperate Components & Old Growth- patch cut to remove overmature trees and stimulate reproduction.

2) Poles - no treatment at this time, possible pole sales later.

3) Mixed Stands- remove overmature trees and younger trees of poor form and vigor.

4) Aspen - no treatment at this time.

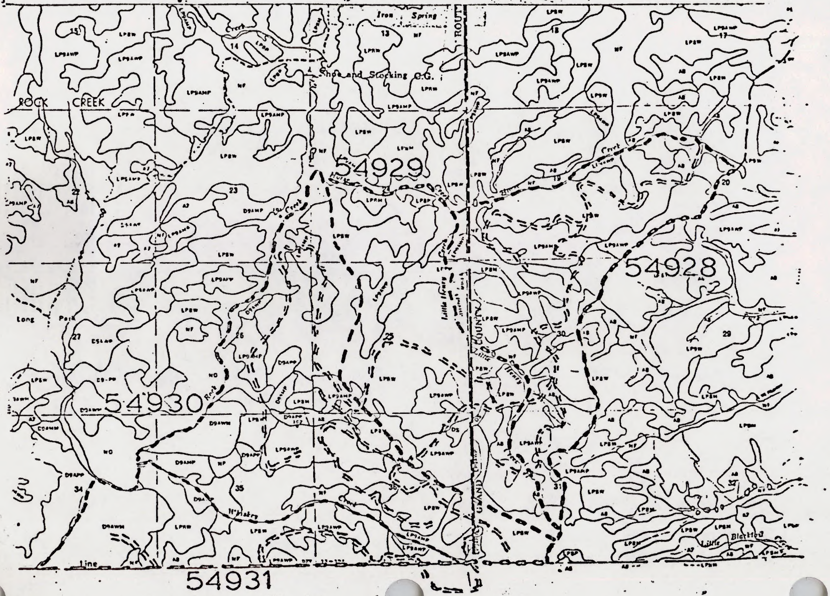
Aprx. 30 ac. of Nonforest and V.I.Z.

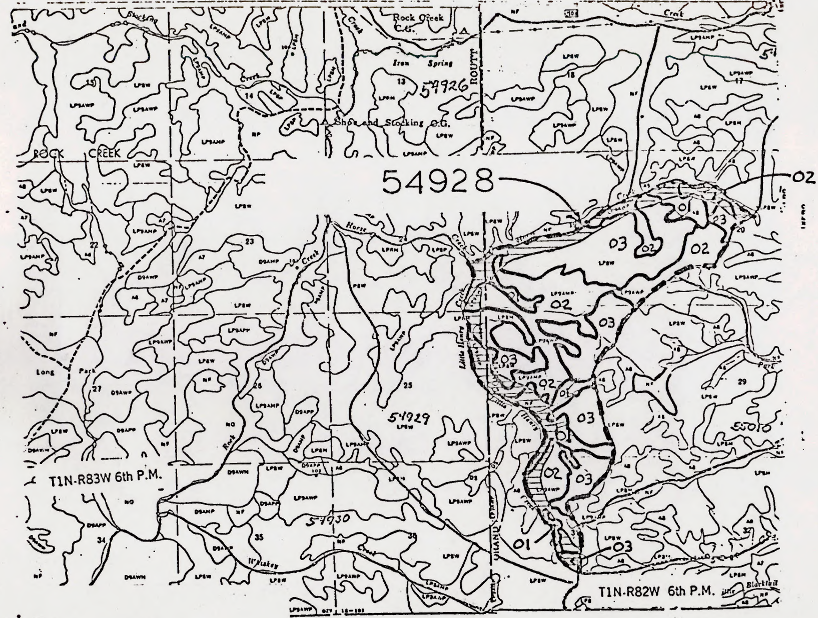
YIELDS / ACRE Treatment

	LEAVE	HARVEST	TOTAL
Acres	355	130	485
# Stems (Poles, ST)	713	56	
Basal Area /ac.	112	60	172 sq.ft./ac.
MBF /ac.	4417	3500	7917
Cunits	—	—	—
Dead MBF (Sound)	—	—	—

Total Cut Vol. 455,000 BF (Softw.) Cut Vol. ——— (HARDW.)

LITTLE WHISKEY SALE
PROPOSED ROADS




Rock Creek C.G.
Stocking
Creek
Iron Spring
ROUTT
54926
13
14
15
16
17
18
Shoe and Stocking C.G.
ROCK CREEK
54928
02
01
03
20
19
22
23
24
Horse Creek
Little Henry Creek
25
26
27
28
29
Long Park
54929
55010
T1N-R83W 6th P.M.
T1N-R82W 6th P.M.
54930
34
35
36
31
32
Whiskey Creek
Rock Creek
GRAND
LPSW
LPSAMP
LPSAWP
DSAWP
DSAMP
DSAPP
DSAWN
AS
NF
NO

W.i.Z. ≡

COMPARTMENT PRESCRIPTION

54929
ROCK CREEK

Routt National Forest

Yampa Ranger District

Prepared By

9/28/79
Date

Approved By

Date

Compartment Description

Compartment 54929 lies west of Little Henry Creek and south of Horse Creek in T1N, R82 and 83W, Routt and Grand Counties.

Access is by foot, horseback, or jeep trail.

The compartment is composed of young growth lodgepole pine which developed under Aspen after fire. Some pockets of old growth lodgepole remain mixed in with extensive stands of pole timber and some mixed pole-sawtimber. Small aspen stands are found throughout.

Windrisk is moderate to high.

Ground fuels are light

Prescription Summary

Detailed prescriptions for each stand are attached.

Timber Harvest

Shelterwood and Patchcut.
366 acres yielding 1.15 MMBF

Thinning

280 acres commercial thinning

Reforestation

None

Salvage

21 acres yielding 50 MBF

No Treatment

For 100 acres of nonforest, aspen, and marginal areas.

The timber harvest is to be in conjunction with the Little Whiskey Timber Sale.

A stand map and proposed transportation system are attached.

For Nonforest - Noncommercial Stands.

COMPARTMENT DATA ELEMENTS SUMMARY

Form I

Compartment No. 549 29

Stand No.		01				
Acres						
Type		Non Forest	and	H[illegible]		
Stand Size						
Type of Survey						
Ground Land Use Class						
Component						
Slope Position						
Elevation						
Slope						
Aspect						
Soil Erosion						
Productivity Class						
Site Index						
Structure						
Distribution						
Softwood/Acre						
Volume						
BA						
Growth						
DBH						
No Stem	S/S					
	Poles					
	St					
Hardwood/Acre						
Volume						
BA						
Growth						
DBH						
No Stem	S/S					
	Poles					
	St					

STAND PRESCRIPT : SUMMARY

Compartment #	549-29	Stand #	02
Lodgepole		Acres	222
Size	Sawtimber	Stand Origin	
of survey		Land Use Class	
Component			
Slope Position	Ridgetop	Elevation	9400
Slope	16 - 25' %	Aspect	NE
Distribution		Structure	
Site Index	38	Survey Yield	
Windthrow Hazard	Moderate	Soil Erosion	

Softwood/Acre

Volume	13942	Basal Area	131
Growth(cub.Net)	32	DBH (Ave.)	10.3
S/S Stems	345		
Pole Stems	42		
ST Stems	537		

Hardwood/Acre

Volume		Basal Area	
Growth(cub.Net)		DBH=(Ave.)	
S/S Stems			
Pole Stems			
ST Stems			

Stand Description & History

Pine → Fire → Aspen → Pine

This area is on or near the ridgetops and is of generally larger size timber than the other stands.

① Old Growth pockets that survived the fire (≈ 30 ac.)

② Pole Patches - dog haired and stagnant (≈ 90 ac.)

③ MIXED YOUNG + OLD Growth (≈ 55 Ac)

④ Aspen outcrops on south aspects (≈ 30 ac)

Nonforest (≈ 15 Ac)

Timber and Other Resource Coord. Sum.

RAM Prescription

PATCH CUT, ITM, SHELTERWOOD

RAM Yield

RAM Class

RAM Decade

Other Resource Coord. and Constraints

Restricted cutting along drainages

Protection Measures

Detailed Prescription, T.S.I. Needs

TREAT EACH COMPONENT :

1) OLD GROWTH - patchcut to remove mistletoe, and overmature trees. This will stimulate reproduction.

2) POLE TIMBER - No treatment at this time. Thin when sale is closed and roads allow access

3) MIXED - remove overmature trees and young trees of poor form and vigor.

4) ASPEN - no treatment

NON Forest — no treatment

YIELDS/ACRE	LEAVE	HARVEST	TOTAL
Acres	137	85	222
# Stems (Poles, ST)	539	40	579
Basal Area	86	45	131
MBF	3000	4200	7200
Cu	—	—	—
De F	—	—	—

Total Cut Vol. 357 mbF (Softw.) Cut Vol. — (HWDW.)

Compartment # 549 27 Stand # 03

Type Lodgepole Acres 536
Stand Size Pole timber Stand Origin –
Type of survey – Land Use Class –
Component Standard
Slope Position Ridge & other Elevation –
Slope 16-25 Aspect N
Distribution – Structure –
Site Index 33 Survey Yield –
Windthrow Hazard Soil Erosion –

Softwood/ Acre

Volume 6837 Basal Area 169
Growth(cub.Net) 25 DBH = (Ave.) 7.5
S/ S Stems 465
Pole Stems 272
ST Stems 735

Hardwood/ Acre

Volume Basal Area
Growth(cub.net) DBH (Ave.)
S /S Stems
Pole Stems
ST Stems

Stand Description & History

Pine → Fire → Aspen → Pine

This stand is just off the ridge tops and is made up of slightly smaller timber - still variable.

1) Scattered and sparce pockets of OLD GROWTH ≈ 60 ac.

2) Extensive pole timber patches ≈ 190 ac.

3) Limited Mixed Large and small pine. ≈ 200 ac.

4) Aspen 50 ≈ ac.

Non Forest ≈ 35 ac.

Detailed Prescription, T.S.I. Needs

TREAT EACH COMPONENT!

1) OLD GROWTH - patch cut to remove overmature stems, mistletoe, and to stimulate reproduction.

2) POLE TIMBER - no treatment cut this time. Thin when gain access.

3) MIXED - remove overmature stems and young trees of poor form and vigor.

4) Aspen - no treatment

Aprx. 55 ac. of Non forest and WIZ

TM Plan- RAM Class
RAM Prescription
RAM Yield
Activity (from TM Plan EIS)
Schedule- RAM Decade:
Prescription
Patch CUT - ITM / SHELTERWOOD
MUM --Coordination
Constraints
Selected Activity- Method
Constraints

YIELDS / ACRE Treatment

	LEAVE	HARVEST	TOTAL
Acres	296	240	536
# Stems (Poles, ST)	921	85	1006
Basal Area	114	55	169
MBF	3838	3000	6838
Cunits	—	—	—
Dead MBF	—	—	—

Total Cut Vol. 720 MBF (Softw.) Cut Vol. — (HARDW.)

Compartment # 54929 Stand # 04

Type	Spruce-Fir	Acres	21
Stand Size	[illegible]	Stand Origin	—
Type of survey	—	Land Use Class	—
Component	Stand		
Slope Position	[illegible]	Elevation	—
Slope	16-25	Aspect	North
Distribution	—	Structure	
Site Index	0	Survey Yield	—
Windthrow Hazard		Soil Erosion	—

Softwood/ Acre			
Volume	8235	Basal Area	125
Growth(cub.Net)	0	DBH = (Ave.)	9.5
S/ S Stems	1300		
Pole Stems	105		
ST Stems	1325		
Hardwood/ Acre			
Volume		Basal Area	
Growth(cub.net)		DBH (Ave.)	
S /S Stems			
Pole Stems			
ST Stems			

Stand Description & History

This small stand is a North slope and very wet. Apx. 2500 BF/ac. of dead volume is present and was killed by the high water-table. A new stand of spruce fir is developing with the majority of the stems in the small diameter class. 21 Acres..

Detailed Prescription, T.S.I. Needs

Remove the dead volume. Sanitize the remaining stems and remove mortality trees.

TM Plan- RAM Class

RAM Prescription

RAM Yield

Activity (from TM Plan EIS)

Schedule- RAM Decade:

Prescription SHELTERWOOD

MUM --Coordination

Constraints

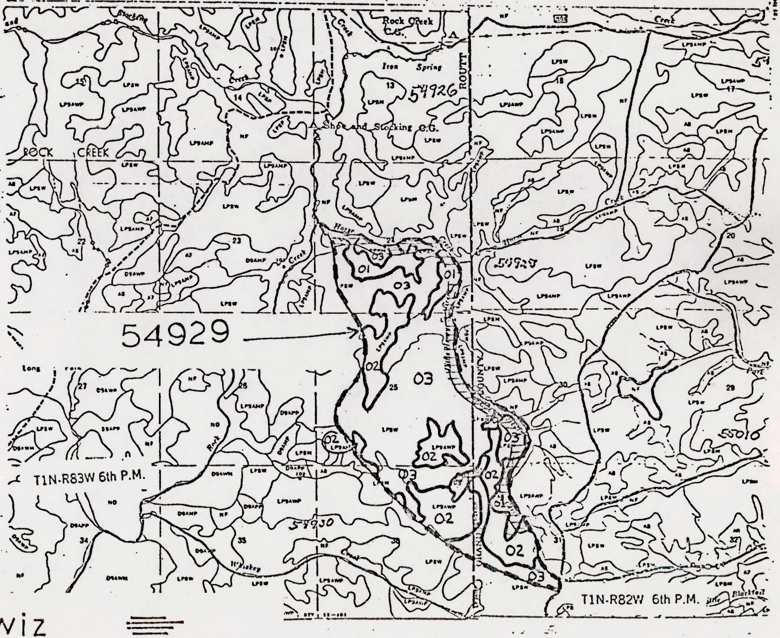
Selected Activity- Method

Constraints

YIELDS / ACRE Treatment ____

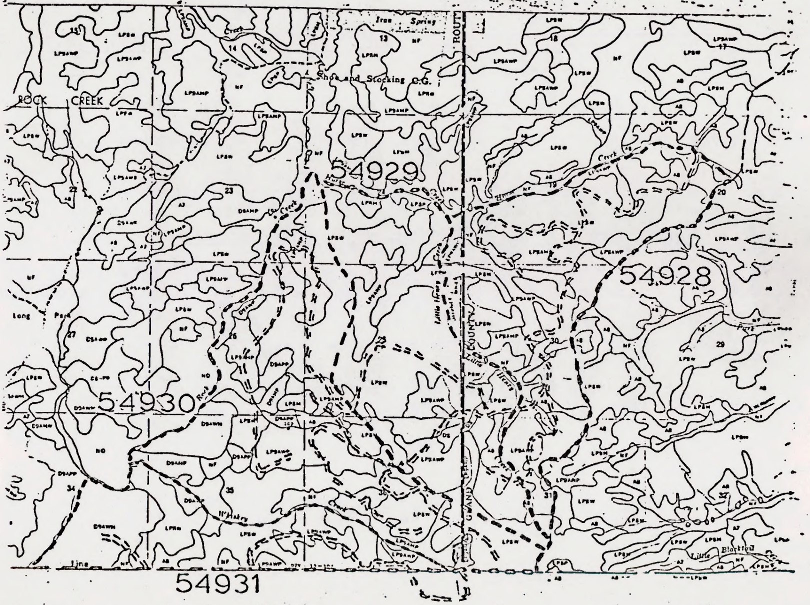
	LEAVE	HARVEST	TOTAL
Acres	0	21	21
# Stems (Poles, ST)	1350	80	1430
Basal Area	85	40	125
MBF Combined ([illegible])	6500	3500	10000
Cunits	—	—	—
Dead MBF	—	—	—

Total Cut Vol. 73500 BF (Softw.) Cut Vol. ____ (HARDW.)


Rock Creek C.G.
Iron Spring
Shoe and Stocking C.G.
ROCK CREEK
Stocking Creek
Horse Creek
Whiskey Creek
Blacktail
ROUTT
GRAND COUNTY
54926
54929
54928
54930
55016
01
02
03
LPSW
LPSAWP
LPSAMP
DSAWP
AB
NF
13
14
15
17
18
19
20
22
23
24
25
26
27
29
30
31
32
34
35
36
T1N-R83W 6th P.M.
T1N-R82W 6th P.M.

wiz

LITTLE WHISKEY SALE
PROPOSED ROADS



COMPARTMENT PRESCRIPTION

549-31
Rock Creek

Routt National Forest

Yampa Ranger District

Prepared By

9/27/79
Date

Approved By

11/21/79
Date

Compartment Description

Compartment 549-31 lies in T1N, R83W, of Routt County Colorado. It is bounded on the south by the Forest Boundary and the base line, on the north by Whiskey Creek and on the west by Rock Creek.

Currently, the only access into the area is by foot, horseback or jeep trail.

The compartment is primarily composed of young growth lodgepole pine that developed under aspen which followed after fire. Stands are large and variable, often containing pockets of old growth that were not destroyed in the fire and that are now falling apart, as well as large areas of small poletimber that has begun to thin. All stands are interspersed with small aspen sawtimber.

Windrisk throughout the area is low to moderate. Ground fuels are very light.

Prescription Summary

Detailed prescriptions for each stand are attached. In general, they call for the following:

Timber Harvest

(Sanitation and patchcut) 212 ac. yielding 750 MBF.

Thinning

(Commercial) 234 acres.

Reforestation

NONE

Salvage

NONE

No Treatment

390 acres.

A stand map and map of proposed roads for the area are also attached.

Compartment #549.31 Stand # 1

Type Non. Forest Acres 36

Stand Size Nonstocked Stand Origin

Type of survey 423 Land Use Class

Component

Slope Position Elevation

Slope Aspect

Distribution Structure

Site Index Survey Yield

Windthrow Hazard Soil Erosion

Softwood/ Acre

Volume Basal Area

Growth(cub.Net) DBH = (Ave.)

S/ S Stems

Pole Stems

ST Stems

Hardwood/ Acre

Volume Basal Area

Growth(cub.net) DBH (Ave.)

S /S Stems

Pole Stems

ST Stems

Stand Description & History

Nonforest

Detailed Prescription, T.S.I. Needs

TM Plan- RAM Class

RAM Prescription

RAM Yield

Activity (from TM Plan EIS)

Schedule- RAM Decade:

Prescription

No Treatment

MUM --Coordination

Constraints

Selected Activity- Method

Constraints

YIELDS / ACRE Treatment

	LEAVE	HARVEST	TOTAL
Acres			
# Stems (Poles, ST)			
Basal Area			
MBF			
Cunits			
Dead MBF			

Total Cut Vol.__________(Softw.) Cut Vol. __________(HARDW.)

Compartment #549-21 Stand #02

Type ASPEN
Acres 27
Stand Size [illegible]
Stand Origin
Type of survey 923
Land Use Class
Component UNREGULATED
Slope Position
Elevation
Slope
Aspect
Distribution
Structure
Site Index
Survey Yield
Windthrow Haxard
Soil Erosion

Softwood/ Acre

Volume
Basal Area
Growth(cub.Net)
DBH = (Ave.)
S/ S Stems
Pole Stems
ST Stems

Hardwood/ Acre

Volume
Basal Area
Growth(cub.net)
DBH (Ave.)
S /S Stems
Pole Stems
ST Stems

Stand Description & History

STAND IS PRIMARILY SMALL SIZED [illegible] ASPEN.

Detailed Prescription, T.S.I. Needs

NO TREATMENT THIS DECADE.

TM Plan- RAM Class

RAM Prescription

RAM Yield

Activity (from TM Plan EIS)

Schedule- RAM Decade:

Prescription
NO TREATMENT

MUM --Coordination

Constraints

Selected Activity- Method

Constraints

YIELDS / ACRE Treatment

	LEAVE	HARVEST	TOTAL
Acres			
# Stems (Poles, ST)			
Basal Area			
MBF			
Cunits			
Dead MBF			

Total Cut Vol. ____________ (Softw.) Cut Vol. ____________ (HARDW.)

STAN PRESCRIPTION SU ARY

partment #549-31 Stand # 03

lodgepole Acres 85

Sawtimber Stand Origin

urvey 933 Land Use Class

Com Stand

Si Po ition Ridge Top Elevation 9800

Slope 16-25 % Aspect N

Dist ion 10 Structure 10

Sit nd 41 Survey Yield

Wind Hazard Moderate So 01

Softwood/Acre

Volum 9937 Basal Area 135

Growth(cub.Net) 38 DBH (Ave.) 8.7

S/S Stem 370

Pole Stem 105

ST St 181

Hardwood/Acre

Volum -0- Basal Area -0-

Grow .Net) -0- DBH=(Ave.) 1.5

S/S St 120

Pole Stem -0-

ST Stems -0-

Stan ription & History

Stand is composed primarially of under rotation LPP (80-100) with scattered old growth trees (>200 yr. old) dispersed throughout. In addition, pockets of small poletimber are common as are occasional pakets of decatent old growth concentrations. The stand has developed under aspen following fire, and scattered young growth aspen can still be seen.

Detailed Prescription, T.S.I. Needs

Th 3 seperate components of this stand will qui seperate silvicultural treatments.

1) Areas of primarially young growth will be ITM'ed to remove old growth trees and igh Risk young growth.

2) Old growth patches that survived the fire ill be patch cut to stimulate growth in he young understory and enhance natural egeneration.

3) Poletimber areas will be thinned commercially or posts and poles following the timber sale.

Slopes >40% will not be logged

Timber and Other Resource Coord. Sum.

RAM Prescription

ITM SHELTERWOOD

RAM Yield

RAM Class

RAM Decade

Other Resource Coord. and Constraints

No timber harvest adjacent to creek.

Protection Measures

WIZ along Whiskey Crk.

YIELDS/ACRE	LEAVE	HARVEST	TOTAL
Acres	35	50	85
# Stems (Poles, ST)	103	78	181
Basal Area	83	45	128
MBF	6.6	3.3	9.9
Cu	-	-	-
Dea	-	-	-

Total Cut Vol. 165 MBF (Softw.) Cut Vol. ____ (HWDW.)

STAND PRESCRIPTION SUMMARY

Compartment # 549-31 Stand # 04

e.	Lodgepole	Acres	272
tand Size	Pole timber	Stand Origin	01
Typ survey	933	Land Use Class	01
Component	Stand		
Slope Position	Ridgetop	Elevation	9500
Slope	16-25 %.	Aspect	N
Distribution	10	Structure	10
Site Index	38	Survey Yield	—
Windthrow Hazard	Moderate	Soil Erosion	01

Softwood/Acre

Volume	5689	Basal Area	105
Growth(cub.Net)	33	DBH (Ave.)	7.8
S/S Stems	195		
Pole Stems	1100		
ST Stems	159		

Hardwood/Acre

Volume	—	Basal Area	—
Growth(cub.Net)	—	DBH=(Ave.)	—
S/S Stems	30		
Pole Stems	—		
ST Stems	—		

Stand Description & History

Stand developed under Aspen following fire and now consists of 4 main components.

1) Large areas of small poles and large saplings (≈170 Ac)

2) Scattered pockets of interspersed young and old growth LPP (≈ 70 ac)

3) Isolated pockets of old growth LPP that survived the fire and are rapidly deteriorating. Reproduction has begun to develop underneath (≈ 22Ac)

4.) Scattered residual of Aspen (≈ 10 Ac.)

Timber and Other Resource Coord. Sum.

RAM Prescription
ITM - Intermediate Cut - Patch Cut

RAM Yield

RAM Class

RAM Decade

Other Resource Coord. and Constraints

No harvest along creeks

Protection Measures

WIZ along Whiskey Crk.

etailed Prescription, T.S.I. Needs

Each component will be treated as follows —

① oles - commercially thinned following imber harvest

② Mixed young and old growth - remove vermature and high risk trees.

③ Old growth - Patch cuts and group election to eliminate mistletoe and timulate reproduction.

④ Aspen - No treatment this decade

IELDS/ACRE	LEAVE	HARVEST	TOTAL
Acres	180	92	272
Stems (Poles, ST)	248	48	296
asal Area	75	30	10.5
BF	1.8	3.9	5.7
Cuni	—	—	—
Dea	—	—	—

Total Cut Vol. 350 MBF (Softw.) Cut Vol. ________ (HARDW.)

Compartment #549-31 Stand #05

Type	LPP/DF	Acres	182
Stand Size	SAWTBR	Stand Origin	01
Type of survey	923	Land Use Class	01
Component	STANDARD		
Slope Position	SIDEHILL	Elevation	9,200
Slope	20-30%	Aspect	N
Distribution	10	Structure	10
Site Index	40	Survey Yield	—
Windthrow Hazard	MOD.	Soil Erosion	01

Softwood/ Acre

Volume	6.5	Basal Area	100
Growth(cub.Net)	—	DBH = (Ave.)	—
S/ S Stems	250		
Pole Stems	120		
ST Stems	150		

~~Hardwood/ Acre~~

~~Volume~~		~~Basal Area~~	
~~Growth(cub.net)~~		~~DBH (Ave.)~~	
~~S /S Stems~~			
~~Pole Stems~~			
~~ST Stems~~			

Stand Description & History

STAND IS A MIXTURE OF LPP AND SCATTERED DF THAT DEVELOPED FOLLOWING A FIRE. APPROXIMATELLY 1/3 OF THE STAND IS INOPERABLE DUE TO STEEP SLOPES (≈60 ACRES) THE REMAINDER CONSISTS OF -

1. INTERMINGLED YOUNG AND OLD GROWTH LPP - (≈50 AC).
2. OLD-GROWTH LPP THAT IS DETERIORATING AND MISTLETOE INFECTED. (≈20 AC)
3. ASPEN (≈20 AC)
4. AREAS OF DENSE POLETIMBER/SAPLINGS (≈32 AC)

TM Plan- RAM Class

RAM Prescription

RAM Yield

Activity (from TM Plan EIS)

Schedule- RAM Decade:

Prescription
ITM-SHELTERWOOD - PATCH CUT

MUM --Coordination - W12 - ALONG ROCK CR.

Constraints - NO TIMBER HARVEST ADJACENT TO CREEK.

Selected Activity- Method

Constraints

Detailed Prescription, T.S.I. Needs

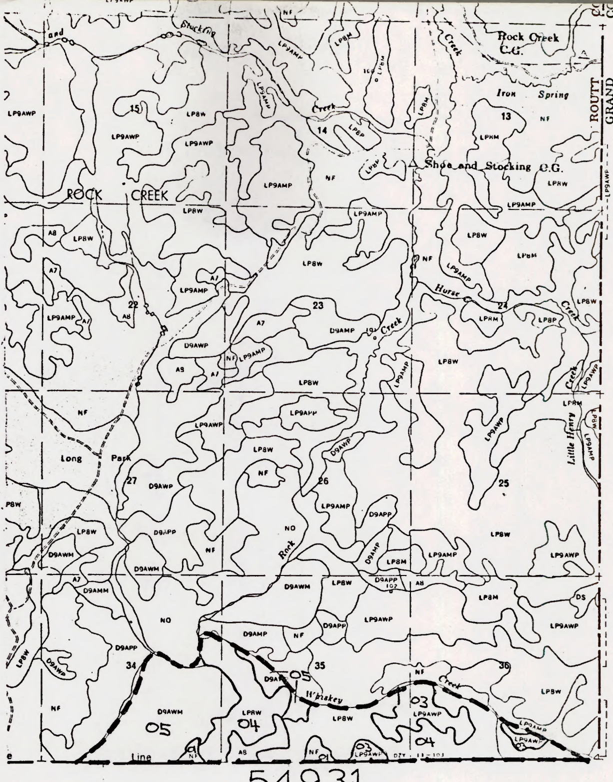
THE COMPONENTS OF THIS STAND WILL BE TREATED AS FOLLOWS -

1. YOUNG/OLD GROWTH - OVER-MATURE AND HIGH RISK TREES WILL BE REMOVED.
2. OLD GROWTH - PATCH CUT TO ELIMINATE DISEASE AND STIMULATE REGENERATION.
3. POLETIMBER - COMMERCIAL THIN FOR POLES, POSTS AND STAYS AFTER TIMBER HARVEST.
4. ASPEN - NO TREATMENT THIS DECADE.

YIELDS / ACRE Treatment ______

	LEAVE	HARVEST	TOTAL
Acres	112	70	182
# Stems (Poles, ST)	200	70	270
Basal Area	70	30	100
MBF	3.0	3.5	6.5
Cunits	—	—	—
Dead MBF	—	—	—

Total Cut Vol. 245 MBF (Softw.) Cut Vol. ______ (HARDW.)



54931

STAND MAP

Definite land line

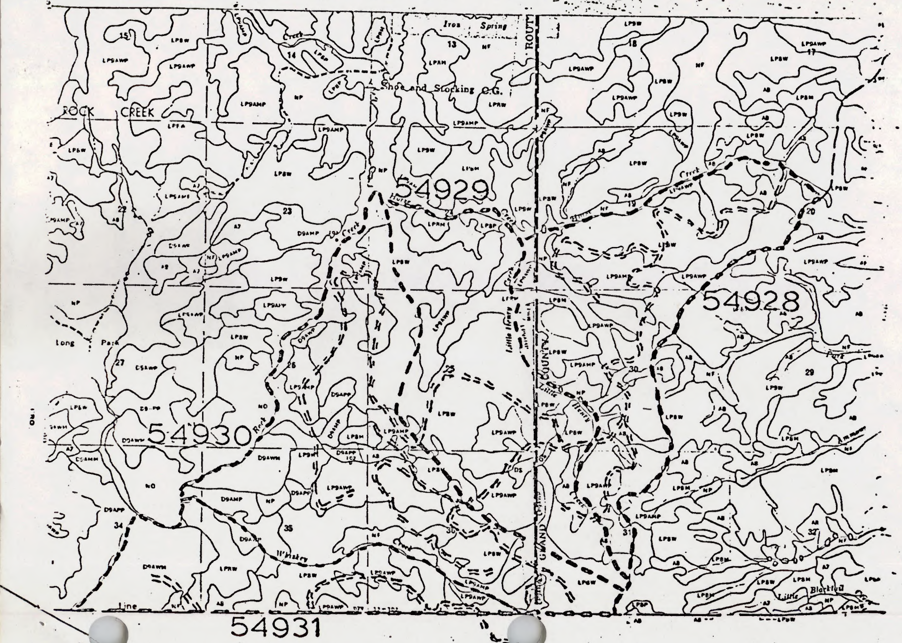
Approximate land line

Unsurveyed— FS protracted land line

Land lines shown solid are supported by found corners or are surveys made since 1910

2 Miles

LITTLE WHISKEY SALE
PROPOSED ROADS



Appendix C
May 1980

Appendix C
For Environmental Assessment - Black Mountain Timber Sale
Road Standards : both USFS & BLM

Width	14 feet with 3-foot wide ditch or without ditch and insloped.
Grades	8 percent maximum except 2 approximately 500-foot segments of 8 to 10 percent.
Curvature	75-foot radium minimum (80 degrees) except 50-foot radius at Y junctions.
Curve Widening	250/R
Cut and Fillslopes	1½:1 to 3:1
Fill Widening	Over 5-foot fill widen 1 foot
Turnouts	Natural turnouts approximately 1,000-foot spacing.
Truck Turnarounds	Every 1,000 to 1,500 feet.
Earthworks	All balanced
Drainage	Water dips except for live draw with 18" minimum CMP.
Clearing Limits	2 feet.
Slopestakes	Uphill only 100-foot maximum spacing.

App. C

Black Mountain Timber Sale Greade Justification

Introduction

This road is for a combination Forest Service BLM timber sale; the access road is on the BLM portion of the sale. The road length above 8 percent grade is 2 segments approximately 500 feet long with probably 8 to 10 percent grades.

Topography

The general topography in this area is rolling hills, shallow wide draws and swales, short spur ridges and in places, somewhat sustained slopes of approximately 40 percent.

The location of the over 8 percent road segments is in a wide, shallow dry swale. The swale bottom is rounded approximately 110-feet or inches wide, and slopes 5 to 10 percent downstream. There is no evidence of overland water flow.

The area is vegetated with lodgepole pine, brush, and grass.

Proposed Route

The flagged line goes up the right hand side of the swale near the steeper sideslopes and stays approximately 2 to 5 feet above the swale bottom. When far enough up the swale, the road crosses the drainage (no overload flow evidence but 18" CMP necessary anyway) with little fill and climbs at 5 to 6 percent out of the drainage.

The flagged location at the two over 8 percent segments and the segement in between is on approximately 10 percent sideslopes and has relativily straight alignment.

Alternative Routes

There is no practical major route change that will still serve the requirements of the timber sale. The only localized alternative would be to lengthen the segment in the swale by immediately crossing the drainage, switchback, recrossing the swale, etc. at 8 percent or less until getting high enough to tie back into the proposed route and climb out of the drainage.

Justification for Proposed Route

The proposed route is the most direct route, has the fewest drainage crossing, least earthworks, and it is far enough out of the swale bottom to not cause any significant erosing problems.

Although over 8 percent in 2 segments, both segments are only approximately 500 feet long and will only have grades of 8 to 10 percent.

Since sideslopes are only approximately 10 percent no significant overland flow, sides, or slumps will threaten the road, and therefore the road drainage. Drainage control will be by ditching, insloping at 3 to 5 percent and water dips.

Grade Just -1

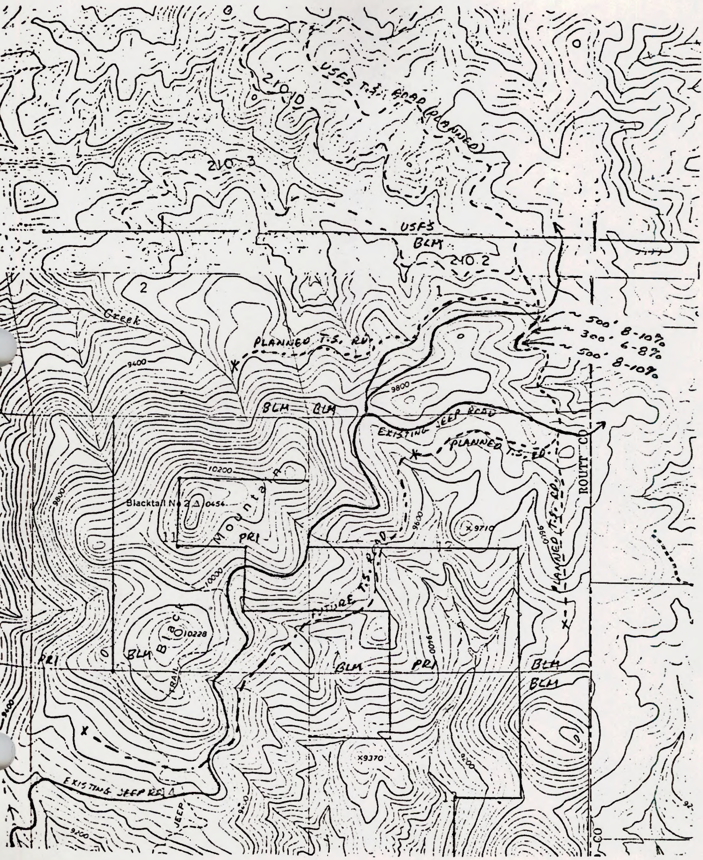
Although over 8 percent, this road segment will only be approximately 1,300 feet overall, not long enough to build up large water velocities and massive erosion.

Approvals

Grand Junction District Engineer	Date
Grand Junction Chief of Operations	Date
Grand Junction District Manager	Date
Colorado State Office Engineer	Date
Colorado State Director	Date

Grade Just. - 2

JOINT BLM - USFS. BLACK MOUNTAIN T.S.
8% GRADE JUSTIFICATION T1S R83W



Glossary

Air dry herbage	- The weight of vegetation after drying naturally. Air dry weight.
Bole	- The central stem of a tree.
C.M.P.	- Corrigated Metal Pipe, it provides cross drainage for roads.
Compartment	- Geographic area that lends itself to like management techniques or can be logically managed as a unit.
Cruising	- The measurement of standing trees to be harvested. Usually expressed in terms of board feet volume.
DBH	- In measuring trees it is the diameter of a tree at breast height or 4½ feet above ground level.
Layout	- Pertains to the on-the-ground preparations that identify timber stands for harvest.
lopping	- The cutting of leftover tree limbs and tops into smaller segments.
MBF	- One thousand board feet measure of tree volume.
Silviculture	- Pertaining to the culture or treatment of a forest.
Stand	- A group or community of plants that have homogenous characteristics.
Station	- In engineering, a distance of 100 feet.
Swale	- Broad bottom drainage that is a depression without a well defined water course or none at all.
Trend	- In range managment the direction of the condition it is going i.e. improving or deteriorating.

BLM Library
D-553A, Building 50
Denver Federal Center
P. O. Box 25047
Denver, CO 80225-0047